

THE DENTAL DIGEST

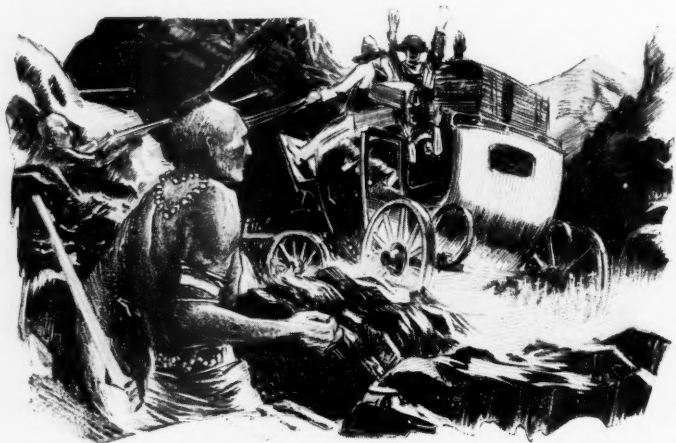


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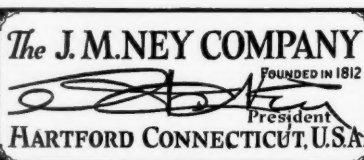
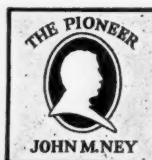


In 1855

FORTY years after the founding of the business now known as THE J. M. NEY COMPANY, an incident occurred which shows that already Ney's Golds had been widely distributed.

A Sioux warrior was caught red-handed robbing a stage coach. When examined, it was found that the buttons and ornaments embellishing his costume were made from *Ney's Gold*, the fruit of one of his previous robberies.

The moral is that Ney's Gold, "**Best since 1812,**" has been held in such high esteem that some persons have not hesitated to steal it.



THE DENTAL DIGEST

Vol. XXX

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No. 2

A New Plastic Principle for Occlusion and Articulation

By A. B. Suter, D.D.S., Elmira, N. Y.

Only the hands guided by the eyes and the brain can properly be called articulators. Relator is a more appropriate name for so-called articulators. The best technic for dentists is one that employs plastic

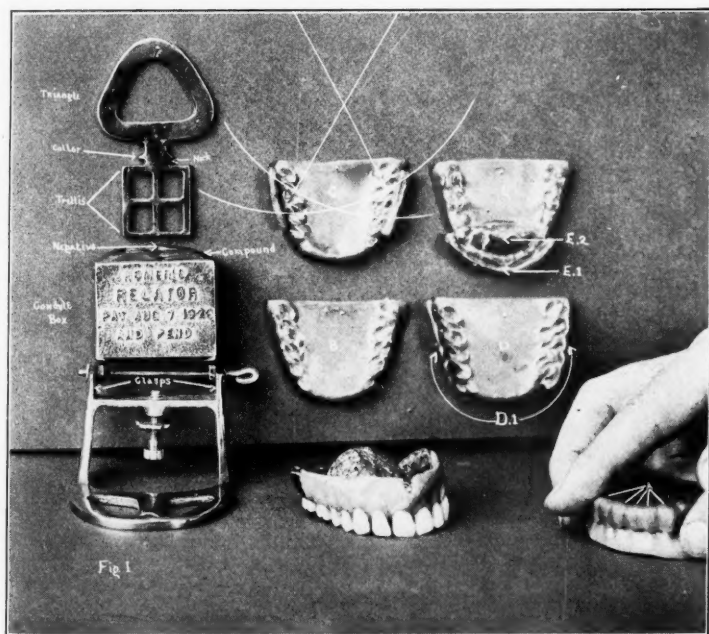


Fig. I

impression material in place of mathematical formulae (according to the law that any movement making a plastic path may be reproduced by same).

The first step in learning the technic should be to make models and bite paths of one's own jaws as described below. This application will prove the principle.

1. To reproduce anatomical relationship in finished dentures, take any set of full upper and lower dentures; mould a sheet of baseplate wax over the lower denture, pressing the cusp points and incisal edges almost through same (Fig. I-A).

2. Spread vaseline on the teeth of the upper denture and place both dentures in the mouth, holding the lower denture in place with index fingers (Fig. II). Have the patient move the lower jaw from side to side until the wax is well marked by upper cusps (Fig. I-B).

3. Remove the wax, which is now a guide path; attach two rolls of wax to the buccal extremities of the cusp paths (Fig. I-C). Reinsert and instruct patient to move jaw from side to side. The wax

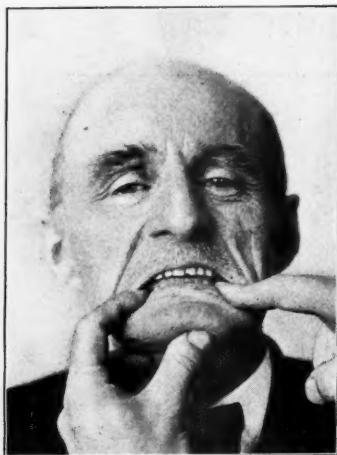


Fig. II



Fig. III

rolls are pressed into the interproximal spaces of the upper teeth with the index finger when the jaw reaches the extreme lateral positions (similar to Fig. II). The same method is used to get the antero-posterior guidepath (Fig. I-E), except that the wax rolls are placed on the lingual and labial. The wax rolls or bite checks (Figs. I-D, 1 and E, 1-E,2) should now be trimmed with a hot sharp knife to three millimeters in height and re-inserted in the mouth to correct any possible distortion. These rolls so placed act as checks and indicate the exact limits of movements to be reproduced on the Relator. If in anterior protrusion the occlusal surfaces of the upper and lower posteriors do not come in contact, build strips of baseplate wax on the bicuspid and molar surfaces of the guidepaths (Fig. I-D, E) until the proper plane of occlusion is established. In cases where the space between the occlusal surfaces is too great, reset the upper, lower or both to the newly established plane of occlusion.

4. Fill the condyle box of the Homer Relator with modeling compound. Be sure it is full and that the compound is hot enough to stick to the sides. Heating the box before inserting the compound will insure the compound sticking. Vaseline trellis (Fig. III) and insert to its neck in the center of box. Fig. IV shows two glass slabs, a convenient

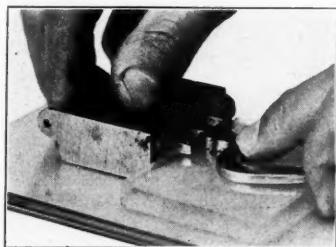


Fig. IV

method of inserting the trellis. *Important:* Do not disturb trellis until the compound has set. The setting is hastened by pouring cold water on the box. After cooling, cut away the surplus compound with a hot knife to a plane surface (Fig. V). The Relator is now a plane line articulator with a modeling compound joint (Fig. V-A). Mount the dentures in central occlusion as on any plane line instrument (Fig. V-B). Use wax bite as guide. After the dentures are mounted, place the lateral guidepath (Fig. I-D) between them, as in Fig. VI.

5. Submerge condyle box in pan of hot water till compound is soft enough to permit movement of the upper in cusp paths of the guidepath. Lean box against sides of pan and hold as in Fig. VI to



Fig. V



Fig. V-A

prevent unnecessary movement of trellis or hinge. Move the upper a few times from one extremity of the guidepath to the other. *Hold as lightly as possible and be sure to follow the occlusal curves of the guidepath.* There will be a decided distal pull as the extremity of the guide-

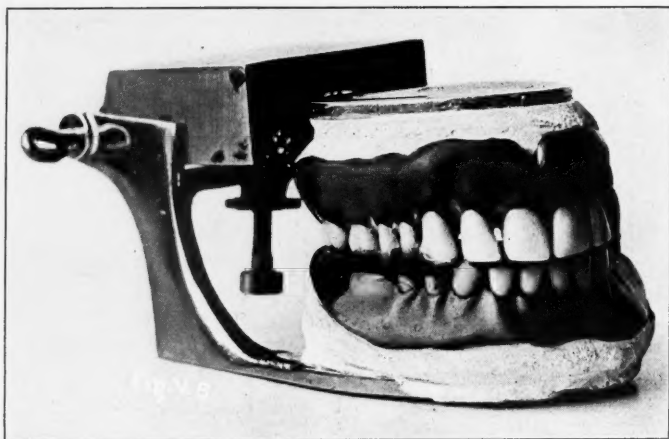


Fig. V-B

path or the bite check is approached, and the reverse on leaving. A few drops of oil in the negative or on the neck of the trellis flowing into the compound after the first few moves is advisable (Fig. VI-A). Next alternate with antero-posterior guidepath (Fig. I-E), holding as in Fig. VI, being careful to bring no unnecessary pressure on the trellis. After repeating alternations two or three times, place condyle box under cold water faucet for a few seconds and again repeat the alternations a few times as the compound cools. Place the Relator in cold water till the compound sets. A negative is now formed in the compound which will permit the dentures from moving over each other as they did in the mouth, thereby indicating where any corrective



Fig. VI



Fig. VI-A



Fig. VII

grinding is necessary to give a balanced articulation. The six lower anterior teeth should clear the upper anterior teeth one-half millimeter when in a position of rest (Fig. IX). High points and lack of contact can be discovered by using carbon papers (Figs. VII and VIII). Methods of grinding-in vary. It may truthfully be said that any practical method of grinding-in applies to the Homer Relator.

TECHNIC FOR FULL DENTURES

1. Make modeling compound bite rims on baseplate or vulcanite. Heat five headless shoenails about six millimeters long and insert in the upper bite rim (Fig. X) in center of occlusal surface and flush with same. Locate one nail in the median line and one on either side in the distal second bicuspid region and the distal second molar region (Fig. X).

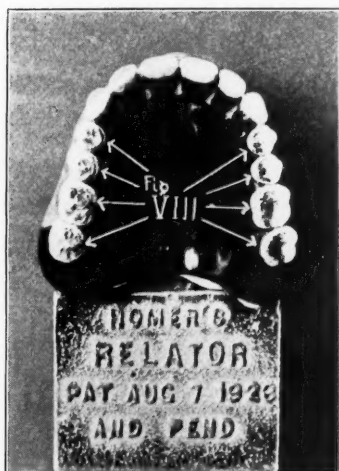


Fig. VIII

2. Trim upper bite rim one and one-half millimeters on entire occlusal surface except a small mound three-fourths millimeter around each nail (Fig. X). Trim lower bite rim on occlusal surface one and one-half millimeters leaving a six millimeter circle where same comes in contact with the *bicuspid* nails (Fig. XI). This surface is located and marked with a sharp instrument while bite plates are in central occlusion in the mouth. We now have two-point occlusion (Fig. XI), which best provides for the rocking movement of the mandible and tissue elasticity.

3. Cut six V-shaped grooves in cuspid and buccal surfaces of the upper and lower bite rims (Fig. XII).

4. To secure central occlusion. Vaseline upper bite rim; mould a piece of softened baseplate wax over lower (Fig. XIII-A), and insert in mouth, steadying as in Fig. II. Instruct the patient to move the mandible alternately in lateral protrusion and retrusion. The inter-

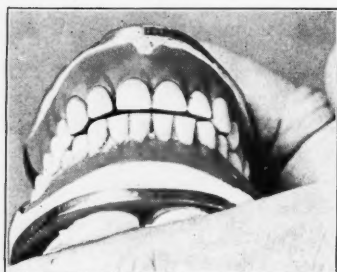


Fig. IX

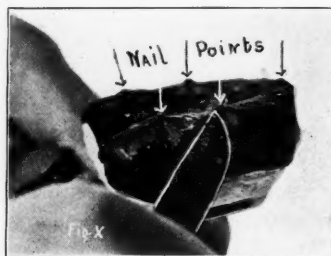


Fig. X

section of nail paths so made on the wax is central occlusion. Two triangles are cut out whose apices intersect the center of said path intersections (Fig. XIII-A-I-I). In central occlusion the shoenails of the upper bite rim will be at the apices of triangles cut in the wax. This is the guide for central occlusion. Seal bite rims out of mouth, in central occlusion, and after preparing Relator (Fig. IV), mount casts and make a central occlusal key (Fig. XIII-E), laying this key aside for reference.

A shorter way to get central occlusion is to have patient close on softened baseplate wax (Fig. XV-A). Attach one layer of softened baseplate wax to lower bite rim. Record lateral and antero-posterior jaw movements in same, attaching bite checks directly to the baseplate (Fig. XV-B). Digital touch should be developed by some experience with the Relator before attempting this "short cut."

5. Record jaw movements (and form negative), as previously outlined under reproduction of anatomical relationship in finished den-

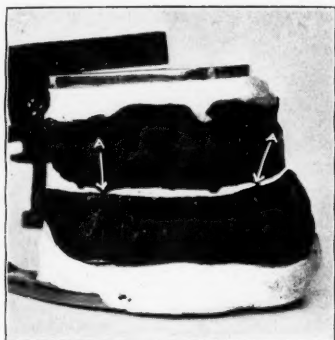


Fig. XI

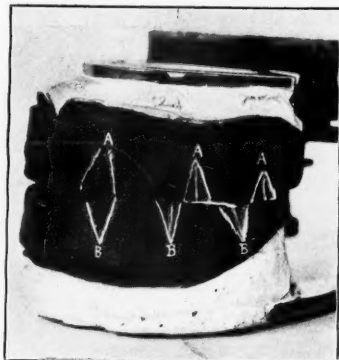


Fig. XII

tures, except after negative is formed, cut away compound to expose trellis (Fig. XIII). Fig. XIII-C shows a lateral guidepath and Fig. XIII-D the antero-posterior. C.1 and D.1-2 show side checks or movement limits of same. Should the central occlusal key fail to go to place after negative is formed, slightly reheat the condyle box and after vaselining said key force to place, remove and rework rims in guidepaths to correct possible distortion of negative. After cooling again, expose the trellis with sharp cold knife. Next, with a hot spatula (Fig. XIV) remove any unnecessary play around trellis, and rework in guidepaths.

6. Set up teeth to get the maximum of occlusal contact in the various mandibular positions, arranging the principal pressure in all sliding movements on the second bicuspid and first molars, finishing in the usual way.

7. After vulcanizing, use technic for reproduction of anatomical relationship in finished dentures to check up and correct displacement.

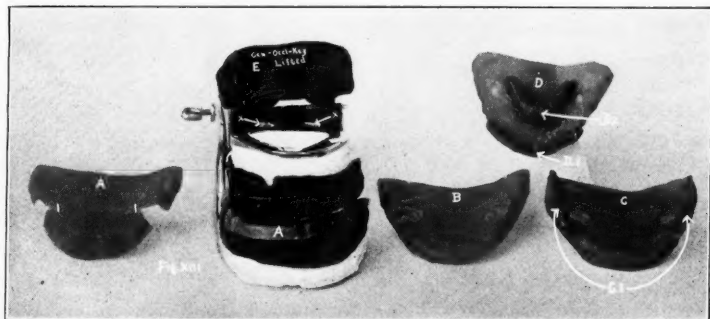


Fig. XIII



Fig. XIV

To check up in the negative used for set-up: After waxing is complete, close teeth on soft wax in central occlusion, lay wax aside for reference; remove lower and, with the upper in central occlusal position, build plaster on lower jaw of Relator till it engages the cusp points of the upper. After vulcanizing, mount as indicated by the plaster. Remove plaster from lower jaw of Relator and mount lower plate as indicated by the wax bite. We are now ready for corrective grinding. In make-overs or rebasing, the set of full dentures to be remade may be used for bite rims.

Should a forward position of the mandible be desired, lock steps may be formed in bite rims or lugs incorporated according to orthodontia principles before making guidepaths.

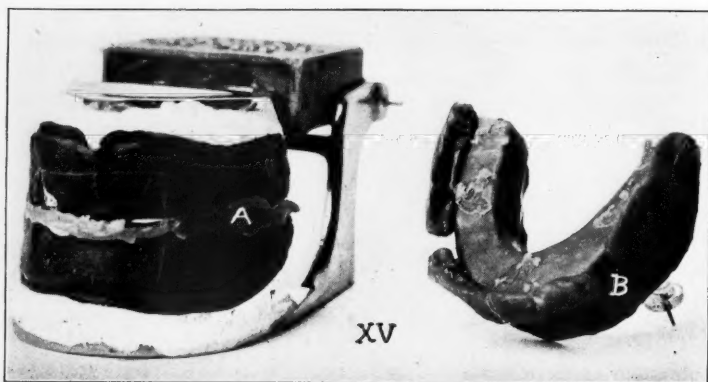


Fig. XV

FOR THE ULTRA-CAREFUL

Place the guidepath between the dentures or bite plates before submerging condyle box in hot water; form a single negative in compound without moving hinge and cool; by having two Relators and duplicate casts mounted, the dentures or bite plates may be readily transferred, or by proceeding as above on one instrument, registering a single movement and cooling, then the other, in the same negative—and then testing with both guidepaths.

ADDITIONAL USES

In applying the plastic principle to a single denture, partials, bridge work, and in orthodontia, use metal or stone models of opposing natural teeth. Amalgam tips on plaster models are used by Dr. W. H. Hoyt. After obtaining the guidepaths, work may be sent to laboratories for completion. With the Relator used as a plane line articulator, incorrect bites are corrected without removing casts from jaws. In making research records, take measure in guidepaths of length of path, remeasuring as often as desired or indicated. The articular curves may be computed from guidepaths with compass (Fig. I-C) and magnifying lens. By attaching pencils with sticky wax to triangle (Fig. I), the articular curves may be registered on a vertical sheet of paper, held at margins only.

TO REGULATE HINGE

Tap clasps (Fig. I) with horn mallet; the hinge should move easily without play.

Remember that human jaws are seldom long in one position, and the best denture construction plans for a combination of muscular co-ordination and cusp guidance, with some provision for play.

Patients can be made to appreciate the desirability and value of the above-described technics, also the greater satisfaction and value of dentures constructed accordingly.

Proof that the vaseline on trellis lubricates the softened compound and causes it to move over its own plastic surface can be ascertained by putting the condyle box in hot water long enough to soften only the surface of the negative compound, when the same may be removed by pulling the triangle. Split the negative, and the compound filling the trellis holes from opposite sides will not cohere.



Indirect Gold Inlay Technic*

Stanley E. Slocum, D.D.S., New York, N. Y.

The success of a gold inlay depends upon the accuracy of all steps involved and, whether we like it or not, it is a painstaking process of restoration. Technic and details are not always mastered, so I am endeavoring to drive home the principles governing correct inlay technic as we perform it today.

My paper is divided into five sections:

1. Cases in which gold inlays are best used.
2. Preparation of cavity.
3. Taking the impression.
4. Laboratory technic.
5. Finishing and setting in the mouth.

Gold inlays are best adapted to cavities in the occlusal, mesio-occlusal, disto-occlusal, and mesio-disto-occlusal of the upper and lower bicuspid and molar teeth. Sometimes it is advisable to use them for buccal and lingual cavities, but not always. A gold inlay is the ideal way in which to reconstruct and restore the proper contact and contour to a given tooth. Gold inlays should not be placed in soft teeth. It is better practice to restore them with silver or porcelain jacket crowns. I have made inlays by the direct and indirect methods, and my preference is the indirect because I get better results.

The cavity preparation is the regular Black method—flat seats, 10- to 20-degree slant for the walls and a 45-degree bevel on all margins excepting the proximal, which is disked slightly to protect the margins and gingival angles and, most important, to remove the cavo-gingival enamel that might fracture under stress of mastication. The 45-degree bevel is to brace up the long rods of enamel to prevent fracture. All cavities should be prepared with true running stones and a true running contra-angle handpiece when one is used. A new abrasive powder now on the market increases the cutting power of the stone, at the same time grinding the cavity smooth and the stone true. There is very much less vibration, as I have experienced the sensation, and I like it very well. The vibration is the cause of the heating up of the tooth and, in my opinion, is the cause of a sore tooth after extensive cavity preparation. Remember, the first step towards a successful gold inlay is a good cavity preparation, and to master cavity preparation requires study, patience and time. I have only mentioned the requirements of the cavity preparation; you must use your own technic and good judgment in the cases presented at the chair.

* Read before the New York Stomatological Society, November 26, 1923.

Now we are ready for the impression, having proper separation and proper cavity preparation. Little impression cups are cut to fit the mesio-occlusal or disto-occlusal of a bicuspid or molar, as the case may be. This is not as easy as it looks, for if the cup binds, the impression may be distorted when removed and you will wonder why the final inlay does not go so easily to place. A copper ferrule is used for all mesio-disto-occlusal cavities and great pains is required in trimming this innocent copper band. For occlusal and buccal cavities a cone of modeling compound slightly heated will suffice. If cup or band is trimmed so as to overlap the margins a trifle, we then fill with slightly heated stick modeling compound and take the impression of the cavity. Press home firmly and with force and chill with cold water. Remove and examine thoroughly, and unless you have a perfect impression you will save time by retaking the impression until a good result is obtained, or look to the cavity preparation for possible error. Get a sharp impression if you have to take a dozen. With an M.O.D. it is sometimes necessary to reheat the impression a very little and replace over the cavity in order to obtain fine sharpness. For a bite, we use a small piece of tin-foil an inch by half an inch and wrap it with red wax. Keep the wax hard and you will get a sharp bite. If the wax is too soft the bite will move away from the teeth. Have the patient close normally into the bite-wax and thoroughly chill. Remove and, if satisfied, fill the cavity with gutta percha and dismiss the patient for several days.

We are now ready for the laboratory work. Trim all excess of the impression with a very sharp knife. The impression is banded with casting wax about three-quarters of an inch high and set in a ring of model plaster. Allow the invested impression to stand for twenty minutes. The impression is packed with very soft amalgam and the excess squeezed out. The packed die is allowed to stand overnight. The next day the die is trimmed, set into the cavity preparation of the wax bite, and poured up with model plaster on an articulator. After the wax is removed the die is vaselined and standard inlay wax is slightly heated and pressed into the cavity. Chill the wax and trim away excess. To heat the occlusal surface, use a ball burnisher and articulate for occlusion.

A word about contact points. Contact points of the bicuspids and first molar should touch and curve away buccally like two marbles in contact. Molars should have a little more contact placed buccally of the median line. The point of contact should be gingivally of the marginal ridge. Remember, if the contact is too high the margins are not self-cleansing and if too low food will pack and force the teeth apart. Pockets are the result of this bad practice. A good way to test for contact is to try the contacts of the other teeth in the mouth in

which the inlay is to be placed. Do justice to your carving; have deep sulci and sharp facets. Attach sprue (bank pins) so that the gold will be permitted to flow readily to all portions. If an M.O.D., attach to the occlusal; if an M.O. or D.O., bisect the angle. Remove the pattern from the die and wipe off the vaseline with a little cotton saturated with alcohol. To get a real smooth casting, paint the wax with graphite to fill in all minute pits. Use a good porous investment and mix as directed. Place a small portion in a glass dish, thoroughly mix with a leather disc revolving in the dental engine. Paint the wax inlay cautiously, never going over the same area twice, then pour the remainder of the investment over the inlay into the cupel. Let stand for twenty minutes, remove sprue-former and sprue. Place the inlay cup face up on a plate of asbestos over a wire mesh over a low flame for ten minutes. The asbestos is to cause the investment to heat up throughout and prevent cracking. Remove the asbestos and heat with a half flame for ten minutes more. Heat with a full flame for ten minutes and allow to stand for five minutes before casting. A good casting formula for gold is 1 grain of copper to 1 pennyweight of pure gold. Have gold hot enough to see scintillations and cast with ten pounds pressure. Throw into water immediately, wash off, heat inlay, and put into a nitric acid bath, then into a solution of sodium bicarbonate to neutralize. Then place into hydrofluoric acid for fifteen minutes to remove thin film of investment. Heat, drop into acid bath and into a bicarbonate solution. Try casted inlay in the die, remove any impingement or pimples of gold, trim excess and swage to place. Carefully finish to the die with stones and sandpaper discs. Take out all scratches with a rubber wheel, polish with pumice, whiting, and finally buff with rouge.

When the patient arrives try the case inlay in the cavity, see that there are no overhanging margins. Adjust the occlusion and, if satisfactory, polish inlay again. Pack the mouth and dry field thoroughly; wipe out cavity with chloroform to remove all film; dry and wash cavity with alcohol; dry and wipe with phenol. If the cavity is very large repeat the alcohol and phenol treatment until all sensitiveness disappears. This seals the tubuli and prevents the phosphoric acid of the cement from irritating the pulp when the cement sets. Mix the cement rather stiff and fill the cavity with same. Place the inlay in the cavity and gradually move to its seat, force home and hold to place until setting of the cement takes place. Trim away excess of cement and if every step has been conscientiously carried out you will have an inlay that excels and you may be justly proud of your operation. Also it is a step toward preventive dentistry, for it cannot be considered as patchwork.

597 Fifth Avenue.

The Relation of the Laboratory to the Dental Profession

By Samuel G. Supplee, New York, N. Y.

(Continued from January)

A QUESTION OF PRICE

There is one factor which it appears has interfered materially with the development of the laboratory. It is that a considerable number of dentists buy their laboratory work from the laboratory quoting the lowest price. It is very easy to quote a low price on laboratory work. It means merely the employment of a less competent staff, which is willing to work faster, and the purchase of less equipment and cheaper materials.

It is very difficult to deserve a high price for laboratory work, because it means the development of a highly skilled staff, and this takes years to accomplish. The quality of laboratory work rendered by any reputable laboratory will be absolutely in keeping with the price charged for it; but when the price falls below the level where expenses can be met and a fair profit earned, the quality will fall to a level which makes it unsatisfactory to the dentist and to the patient.

WHAT CONDITIONS SHOULD THE DENTAL PROFESSION ESTABLISH?

It should teach its own members enough about practical laboratory work so that they will realize that the laboratory man does not see the patient but is absolutely dependent upon information transmitted to him by the dentist. They should be informed just what directions the laboratory man must have and how they must be given to be intelligible.

The various dental societies and organizations should provide means of accepting laboratory men with the desired qualifications into their societies as associate members, or in some limited form that may give them the opportunity of listening to the papers and of expressing themselves on subjects relative to their work. The laboratory man is eager to receive valuable suggestions, and you will probably be surprised at the number he is in a position to make. In most societies today he is not made welcome and has to get his up-to-date technic by securing a private invitation, get it second-hand through some member who does attend, or wait a long time until it is published in the journals. This delays the dentist in getting up-to-date technic from his laboratory. It would mean much to the dental profession if the laboratory man could get it first-hand and catch the personal enthusiasm and inspiration of the one presenting the subject.

The various state or local organizations should collaborate with the laboratories and establish some means of educating and licensing

laboratory owners and in this way compel them to live up to certain standards; and these organizations, working probably through committees and in cooperation with laboratory owners, should officially supervise the training of men who have taken up mechanical dentistry as a vocation to understand conditions in the mouth without giving them the privilege of mouth practice. There is a vast difference between teaching a man from the mouth and from the model. The more a dentist knows about the laboratory man's work and the more the laboratory man knows about the dentist's work, the better for both parties. Both laboratories and dentists have found that it takes from three to five years to train a man thoroughly in *any one* of the many branches, and few of them are capable of becoming competent men in less than four years.

The laboratory field has become so broad and has to deal with the construction of so many different kinds of appliances that there are many specialists developing in the various branches. Most of the smaller laboratories devote their time to specialties and the larger organizations maintain a number of special departments, each devoted to only one kind of work. Experience has proved that this plan produces the best results, and the various educational institutions would do well to adopt these methods of teaching.

There should be a distinct line drawn between a dentist's assistant or journeyman and a competent technician. The standard for the laboratory man, or dental technician, should be on a par with that particular knowledge required of the dentist. A certificate or degree signifying this qualification should be held by every dental laboratory or first-class dental technician.

The dental profession should find some way of further impressing on the colleges the necessity of spending more time in teaching students to take correct impressions, select proper forms of teeth and proper hues, and supply the necessary casts and carefully marked means of transferring them, so that the laboratory technician may see all the conditions that are necessary for a complete understanding of the case without leaving so much to be taken for granted.

SOME PROGRESS HAS BEEN MADE

In outlining these suggestions I am not presenting anything that is entirely new. Many steps have been taken within the past few years along some of the lines above enumerated. Laboratory men have been privileged to attend many of the post-graduate courses that have been conducted along the line of denture construction in both bridge and plate work. Several dental societies have taken laboratory men in as associate members or have encouraged them to take an active part. It

is wonderful to note what a difference it has made in the laboratory service to the dentists in those localities, because the men are able to get that personal touch which is so valuable to both.

The privilege of free advertising seems to stand in the way of permitting this in a larger degree, but this could be eliminated if representative men from the laboratories could get together with representatives from the societies and determine on standard requirements that are absolutely necessary to qualify a man or organization as eligible. After the ability of the laboratory to produce results is determined, it should be invited to come before the society as an individual laboratory or as representing a certain group of laboratories. There is no doubt that some will misuse this privilege, even if extended in a limited form, but there are few advantages that do not have slight disadvantages.

The impressions, bites and measurements received today are very much better than they were five years ago.

The cooperation of the dentist with the laboratory is also far greater than it was a few years ago.

I think great credit should be given to the many progressive men in this great Middle and Northwestern section who have done so much to advance prosthetic dentistry and who have been the first to see the advantages to be gained by working hand in hand with the industrial dental laboratory. I refer particularly to those who have been directly or indirectly associated with the University of Minnesota. The dawn of a brighter day is indicated when a man such as Dr. Forrest H. Orton, who at one time had little respect for the so-called "commercial laboratory," realized the wonderful possibilities and discovered the shameful way in which the laboratory was being misrepresented and had the courage to be the first one to make a plea in its behalf before this organization last year. At this same meeting, Dr. Victor H. Sears, who was formerly a laboratory manager, read a paper which has since been published in the June, 1921, issue of "Dental Facts." He indicated very clearly to the dental colleges the need of establishing courses for "dental assistants." He can tell you, however, that the kind of men the industrial laboratory should employ must know more from a technical standpoint than the dentist's assistant.

We owe a debt of gratitude to Dr. George Wood Clapp for his untiring efforts to advance prosthetic dentistry. He is now making his influence felt in the dental laboratory field by extending courses to experienced laboratory men who are devoting their time to anatomical articulation and scientific vulcanization.

Several colleges are preparing to conduct courses for the purpose of training men for mechanical work, one of which I understand is now in actual operation.

Laboratory owners, such as Henry P. Boos, I. J. Dresch, B. I. Martinez, J. Schwarz, Dr. Adolph Gropper and many others, have done wonderful work in educating laboratory men for their own organizations and collaborating with the dentists in raising the standard of laboratory work in general.

WHAT THE LABORATORIES ARE DOING

The up-to-date laboratory is in a position to do a great deal of educational work in both impression taking and denture construction, because it is brought in close touch with a great mass of dentists, many of whom, for various reasons, are not regular attendants at the State and National meetings. Prosthetic work is only a small part of the daily work of this class of dentists. They do not devote much of their time to the impression technic and the design of their appliance but depend entirely upon the laboratory for information and criticism. It is a great wonder how many of them retain their patients when one imagines how some of their dentures must fit, judging from the specimens of impressions and casts on which the laboratories are compelled to construct dentures. I say "compelled." Yes, that is a fact, because many times a day laboratories receive imperfect impressions. They tell the dentist where the impressions are wrong, only to receive replies such as these: "Yes, I know, but I couldn't take another one as the patient positively would not permit me"; "The patient is going away"; "I am in a big hurry and must have it immediately and will take a chance"; or some other good excuse is made to cover what appears to be their shortcoming. The "big hurry" seems to be the one used most and is the greatest obstacle that the laboratory men have to overcome. Dentists always seem to be in a hurry.

The laboratory which gets the work out the quickest is the one which secures the business of many dentists, and the laboratory owner has to organize the business with the thought of speed rather than of being efficient, in many instances, simply because he knows that a dentist will overlook defects if he can get his work quickly.

It was my intention to show a number of slides to illustrate some of the conditions which the laboratory men have to meet and the educational work which they can do, but because of this rush spirit I have succeeded in making only a few actual photographs and shall have to complete them with word-pictures.

I have been asked by several members of the Society to present in concrete form a chart indicating what the dental laboratory requires for successful denture construction. In attempting to do so, I found that it would take a chart too complicated to be practical, but I have with me for those who are interested a number of typewritten sheets on

which I have indicated some requirements that I think are essential in order to secure the best results from the laboratory.

In conclusion, I wish to quote two sayings which were taught me when a boy and which I have found to be very true. They both apply to this paper.

"Our best friends are those who tell us of our faults and help us correct them."

"Successful cooperation is not so much the *willingness* to work together as the *ability* to *understand* one another."

(Illustrated "Cases" to be shown next month.)

Rational Treatment of Pulpless Teeth

By Elias Lieban, D.D.S., New York, N. Y.

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Metropolitan Hospital, New York City.

(Second Article)

DIAGNOSIS

A careful diagnosis must precede any effort in root canal therapy. Devitalization should be the last resort; but in cases of hyperemia, accidental exposures with extensive caries, exposures due to abrasion, erosion, and traumatism which fractures the crown, conservative treatment is out of the question, as there is no means of adequately protecting the pulp against infection. Devitalization or immediate extirpation must be resorted to in order to relieve the patient from suffering. The destruction of the arch of young patients caused by the loss of a tooth, the importance of retention of a tooth for some artificial appliance, and anterior teeth that are difficult to replace should be given careful consideration.

Age is an important factor to be considered. Young patients have greater resistance and will respond more readily to treatment than older ones. The general health of the patient is also a vitally important factor in the predisposition to infection. Patients suffering from tuberculosis, syphilis, diabetes, anemia or malnutrition should not have any root canal treatment attempted where infection is present. If there is doubt as to the prognosis of infection on account of age or general debility, a blood count can be taken to ascertain whether or not there is a deficiency of leucocytes. If the report is unfavorable, surgical removal of the tooth is recommended.

The first procedure in treatment of teeth to be devitalized or in non-vital teeth is the making of a radiogram which will reveal the size

and direction of root or roots, the condition of the apical area and supporting structures, as far as it is possible for the radiogram to show. The wrong angle may distort true conditions; therefore, when in doubt a few radiograms should be taken at different angles. One must be familiar with the anatomical structures and normal conditions in order to be able to differentiate diseased conditions from the normal. A radiogram will show only the result of infection outside of the pulp canal. Even in cases where the health of the patient is favorable, it is not advisable to attempt to save infected teeth that show a considerable destruction of cementum, or where the apices penetrate the maxillary sinus, or in pyorrhetic conditions where the alveolus has been destroyed.

TESTS FOR VITALITY

1. Color.
2. Translucence (Illumination by mouth lamp).
3. Thermal Test.
4. Electric Current.
5. Percussion.
6. Radiography.

Color. A tooth which is darker in shade than the adjacent teeth. (Possibly bluish gray in appearance.)

Translucence. Absence of live tooth appearance, especially with illumination by mouth lamp.

Thermal Test. Non-vital teeth will not respond to heat or cold. For a heat test use heated gutta percha on the end of an instrument, or warm air spray. For a cold test isolate the tooth in question and use ethyl chloride spray.

Electric Current. (Pulp Testing or Ionization Machine.) The holder with a needle fitted to the end is attached to the positive electrode; the negative electrode is held in the hand by the patient. Several teeth which are normally vital are now tested by touching the needle to the crown portion. We can also test by making and breaking the current. The regulator should be on the zero position to start with, and must then be advanced gradually until the tooth responds and the tolerant degree is ascertained. With this as a guide the suspicious tooth is tested. Do not apply to gold crowns or metallic fillings, as more current is required to penetrate enamel than metallic fillings, and any tooth which has an inlay or cement filling is more or less non-conductive. Teeth in which secondary dentine is present will not respond so rapidly, and in cases of hyperemia the tooth may respond to a smaller amount of current than the normal one; therefore, the electric current is recommended only as a supplementary aid in diagnosis.

Percussion. This is accomplished by placing a finger over the apical area of the suspected tooth and striking the crown with an instru-

ment at different angles. If the alveolus has undergone destruction, the vibration will be transmitted through the root to the fingers. This test is of no value where a pyorrhetic condition is present.

Radiography. With the radiogram we can ascertain the condition of the periapical tissue and surrounding structures, which may be as follows:

1. Normal.
2. Circumscribed Radiolucent Area. Primary Granuloma (Crane).
3. Diffuse Radiolucent Area. Rarifying Osteitis (Crane).
4. Circumscribed Radioparent Area. Cyst (Crane).

Circumscribed Radiolucent Area. At first this may disclose no abnormality of the periapical tissues, except a slight thickening in the periapical pericementum, or any extent of rarifying osteitis. Careful study will reveal an absence of the apical lamina dura and an indefinitely circumscribed area to a varying degree more radiolucent than the surrounding structures.

Diffuse Radiolucent Area. This type of case shows an irregularity of the radiolucent area which may vary in its limitations to an entire loss of form. The irregularity of general outline is caused by ramifications of inflammatory tissue which extends from the central mass into the surrounding bone. The cementum becomes roughened and the alveolus softened. This condition represents the absence of the reparative effort in the first type of circumscribed area and follows negligence, improper treatment, or failure of the patient to resist the infection.

Circumscribed Radioparent Area. This type of case shows a darkened circumscribed area outlined by a white line which definitely separates radioparent from normal structure. A definite cyst wall is attached to the root end.

The dento-alveolar abscess is another type of periapical disease which is frequently encountered. There are two kinds:

1. Blind abscesses, those without fistulas, except the pulp canal through which the pus can escape.
2. Open abscesses, those with fistulas for the escape of pus.

Alveolar abscesses are either acute or chronic, and may present a radiographic record identical with the circumscribed or diffuse radiolucent areas. The blind type, which is usually of the chronic or subacute variety, can be definitely determined only after treatment has been instituted. Clinical diagnosis of the acute abscess is based on the following reactions: tenderness to percussion, elongation of tooth, looseness in the alveolus, tenderness to palpa-

tion over the root, swelling and inflammation of the gum, and fluctuation at location where abscess is about to point.

NOTE: Care must be taken not to confuse the anatomical structures, such as the maxillary sinuses, nasal fossae, anterior palatine canal, and the mental foramina. Trace line of periodental membrane and, if uncertain, take radiogram from different angle.

The radiogram will also show faulty root canal fillings, broken instrument left in canal or perforations.



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5

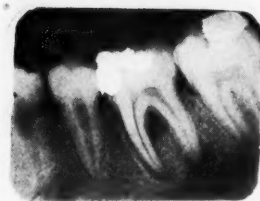


Fig. 6



Fig. 7



Fig. 8



Fig. 9

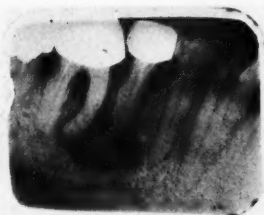


Fig. 10

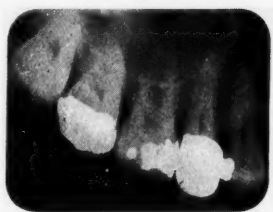


Fig. 11



Fig. 12

- Fig. 1. Normal Condition.
 Fig. 2. Circumscribed Radiolucent Area (Primary Granuloma). Due to traumatic injury. No caries present.
 Fig. 3. Circumscribed Radiolucent Area (Primary Granuloma).
 Fig. 4. Circumscribed Radiolucent Area (Primary Granuloma). Central and lateral. Note anterior palatine foramen.
 Fig. 5. Circumscribed Radiolucent Area (Primary Granuloma). Central. Diffuse Radiolucent Area (Rarifying Osteitis). Lateral.
 Fig. 6. Circumscribed Radiolucent Area (Primary Granuloma). Mesial root 1st molar. Diffuse Radiolucent Area (Rarifying Osteitis). Distal root 1st molar. Note destruction of periapical tissue.
 Fig. 7. Diffuse Radiolucent Area (Rarifying Osteitis). Lateral.
 Fig. 8. Circumscribed Radiolucent Area (Primary Granuloma). 1st Bicuspid.
 Circumscribed Radioparent Area (Cyst). 2nd Bicuspid.
 Fig. 9. Circumscribed Radioparent Area (Cyst).
 Fig. 10. Diffuse Radiolucent Area. Chronic alveolar abscess, non-fistulous type. Diagnosed after tooth had been opened. Bicuspid.
 Fig. 11. Lower cells of antrum. Trace line of periodental membrane.
 Fig. 12. Mental foramen.

At this point we are able to make a differential diagnosis, and the pulp of the tooth in question is classified as follows (Crane):

1. Normal Pulp.
2. Exposed Pulp (Non-infected).
3. Exposed Pulp (Infected).
4. Pulp Undergoing Decomposition.
5. Non-vital Pulp (Without Periapical Disturbance).
6. Non-vital Pulp (With Periapical Disturbance).

Exposed Pulp (Non-infected). Accidental exposures; fractures.

Exposed Pulp (Infected). Extensive caries.

Pulp Undergoing Decomposition. Abrasion, traumatic occlusion, pulp nodules, hyperemia.

Non-vital Pulp (Without Periapical Disturbance). Desensitizing pastes, large metallic fillings, lying close to pulp, deep-seated synthetic fillings, traumatic injury.

Non-vital Pulp (With Periapical Disturbance). Result of sepsis in pulp chamber, pressure in pulp chamber by careless introduction of temporary fillings during treatment, forcing septic substances through apex, use of escharotic drugs which permeate the apical foramina and injure the surrounding tissues.

17 West 42nd Street.



Removable Bridge Construction. Inlays With Male and Female Attachments

By Anastasis G. Augustin, D.M.D., New York, N. Y.

INDIRECT METHOD

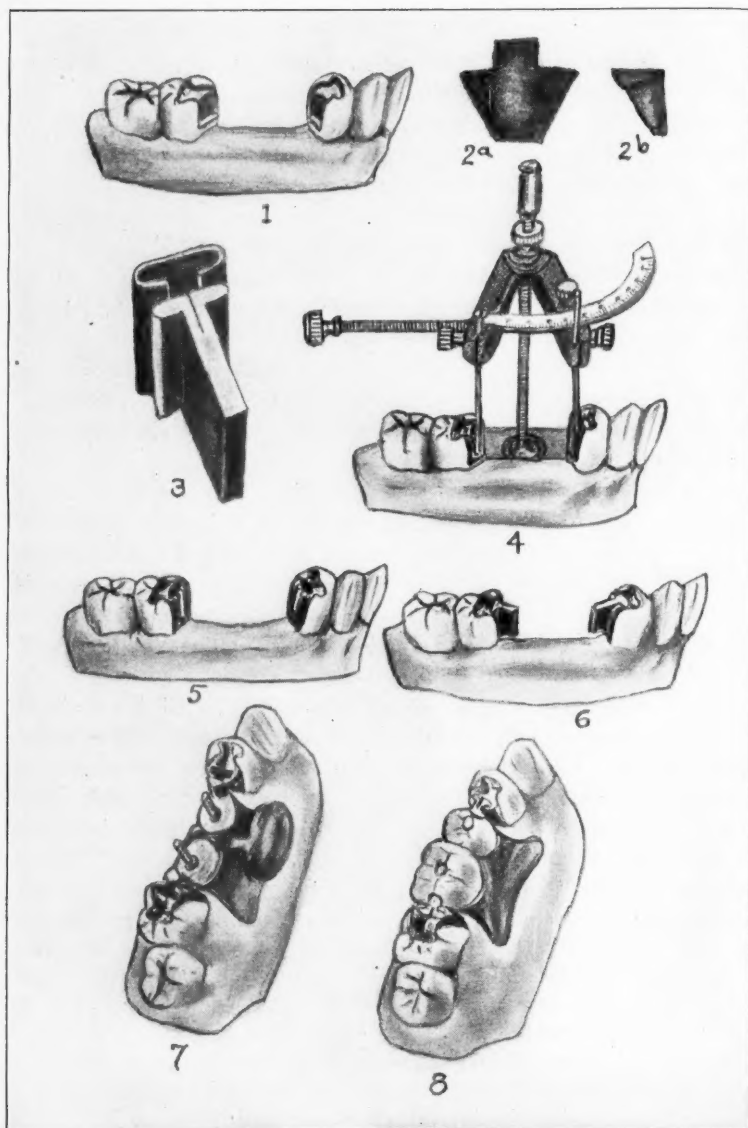
For the construction of removable bridges there are some ready-made attachments manufactured. An ideal removable bridge when constructed should be movable, as advocated by Herman E. S. Chayes, allowing the bridge to follow the masticatory movements of the jaws and the teeth, the bridge thus being composed of retentive abutments which hold the female part of the attachments, and the saddle supplying the male section and the missing teeth.

If the teeth for abutments are perfectly sound, it is sometimes advisable to construct a clasped removable bridge, as described in the previous article, to prevent the necessity of tooth destruction by cutting. However, if the teeth are decayed or have been filled, or there is danger of their being worn out by the use of clasps, then a bridge with attachments is preferable. A description of such a bridge with illustrations and technic for construction follows.

To restore a lower second bicuspid and a lower first molar on the same side, first prepare the cavities for the inlays in those teeth which will hold the attachments, carrying the outline of the cavity mesio-occlusally on the second molar, and disto-occlusally on the first bicuspid, bearing in mind to secure well defined dovetail extensions at their occlusal. And it should also be borne in mind that the preparation should be deep enough to receive the box of the attachment.

In preparing, the cavities do not have to be parallel, but it is very important that the abutments bearing the attachments should be *exactly* parallel. Fig. 1 shows cavities prepared. Now take a wax squash bite and an impression of the opposing teeth in modeling compound. Next, prepare two special small trays of German silver to fit the individual teeth. Fig. 2a shows the metal pattern of the tray flat open. Fig. 2b shows the same folded to shape to envelop the tooth, with the joints of the metal tray soldered with silver solder. When the trays are trimmed and smoothed, fill one at a time with compound, vaseline its surface slightly and take the impression of the cavity, applying pressure evenly at its occlusal and mesial or its distal, as the cavity happens to be. When chilled, remove it. If the impressions are well defined and sharp, replace them; if not, add more softened compound over the same and repeat the operation. Now vaseline the outer surfaces of these metal trays bearing the impression of the cavities to be inlaid, and

complete the impression in plaster. When set, remove it in sections, assemble the parts in tray, shellac and varnish the plaster part. When dry, pack the modeling compound impressions of the cavities in copper



amalgam, and fit posts in center to facilitate the removal of the individual metal tooth from the cast. When amalgam has set, oil surfaces and pour the rest of the impression in artificial stone. When set, articulate and proceed as follows: oil dies, place female attachments in mandrel and parallel with the parallelometer, as in Fig. 4. When parallel, wax the female attachment in position with inlay wax, remove mandrel and complete carving of the inlays. When ready, fit graphite rods into the female boxes, remove, wipe with alcohol, invest when ready, cast in 22-karat gold. Fig. 3 shows attachments.

The following technic also would give satisfactory results. The inlays should be partially carved, leaving enough space for the reception of the boxes, there invested and cast. Replace the inlays in the dies, place boxes parallel, wax in position, fill boxes with graphite rods to prevent the solder from flowing in, remove the inlays, invest and solder with 20-carat gold solder, filling all the space and restoring the contour as well.

Replace the inlays in the dies, as in Fig. 5. Fig. 6 shows the male attachments in the boxes. Now select tube teeth of required shade and grind them in position, hollowing at sides of porcelain to make space for the male attachments. Oil porcelain teeth, carve the saddle in inlay wax while the male attachments are in the boxes, remove the tube teeth, and also the saddle, with male attachment, wipe with alcohol, invest, and cast in 22-carat gold, as in Fig. 7. The saddle also could be made separate, relation of the male attachments taken, invested and soldered.

When the bridge is finished and polished, cement the tube teeth in position, as in Fig. 8. When the patient appears, cement the inlays which carry the boxes in place, and finish the margins with sandpaper discs, and burnish margins with dull round burs.

167 West 71st Street.



The Sense of a Paper on Root Canal Therapy*

By Edgar D. Coolidge, D.D.S., Chicago, Ill.

(This is not a complete or authentic report. It merely represents the effect of the paper on one in the audience.)

Careful technic in root canal treatment has been rewarded with a high degree of success, and a large percentage of treatments under such conditions can be looked upon as successful. Noyes was able to show that in 70 per cent of the root canal fillings he could check up on after fifty years of practice there appeared radiographic evidence of healthy periapical conditions. There is little doubt that a large percentage of failures in the past have been due to lack of care on the part of the operator.

The test of success in root canal treatment is that the root will stand critical examination by another dentist or a physician without being condemned as a source of pathology because of evidence he sees in the radiograph. A root surrounded by healthy tissue is not a menace to the health of the individual.

Radiographic examination is not an exact science. Not until several radiographs of a suspected area have been taken and studied can an accurate diagnosis be made. Interpretation of radiographs is subject to variation at the hands of different readers. One diagnostician may consider a slight inflammation as a serious menace while another may go to the opposite extreme. All of us would condemn to extraction those cases which show large radiolucent areas with considerable bone involvement and with the apex of the root projecting into the cavity.

Radiographic studies may be very valuable in showing periapical changes taking place before pulp removal. If such areas of change which have developed before pulp removal do not clear up after the removal of the pulp, it is not quite so much of a reflection upon the skill and technic of the operator as it would be if the periapical tissues were healthy before removal and developed the area afterward.

A frequent survey of one's root canal fillings by radiograph is beneficial to the operator. Successful and unsuccessful cases should be studied. No one knows what percentage of his fillings are successful until he checks up by such a method. If one who has not made such an examination is asked, he is likely to reply that all of his fillings are successful.

The speaker classified periapical conditions under five headings: normal, acute abscess, granuloma, liquefaction necrosis, and cyst. Following examination, it is his practice to record the findings upon a

*Read before the Pathodontia Section of the First District Dental Society, New York, October 15, 1923.

form suggested by Dr. Arthur Black for pulp case histories. This chart is printed on the outside of an envelope and the measuring wire used for the case, together with the radiograms, are kept inside. Additions to the first record are made upon subsequent examinations and the envelope is kept in the file. Such records become very valuable.

It is better to remove a diseased pulp than to let it die. It is better to remove an exposed pulp than to resort to pulp capping, if the patient is more than fifteen years of age.

Radiograms of teeth with diseased pulps will often show that the periapical tissues are involved while the pulp responds to vitality tests. If the pulp is carefully removed and the canal properly filled, there may be a periapical condition present which another operator, who was not familiar with all of the conditions, might diagnose as a menace to the patient's health. But the operator who knew all the conditions might not consider the area to be infected and he might not regard it as a menace to the health.

Radiograms should be taken at the beginning of the work upon a canal. It is not so important to have a canal filled so that some of the root filling projects as it is to avoid injury to the pericementum. Grove states that all pulp tissues should be removed without injury to the periapical tissues so that the cementoblasts may continue their work and close the foramen to its normal diameter.

Complete pulp tissue removal is often hopeless. Many partially filled canals have stood the test of time. It seems that too much importance has been attached to the filling of multiple foramina. All foramina are formed by the cementum, while the pulp lies wholly within the dentine. The speaker expressed the belief that the pulp canal work can be made successful in a large percentage of cases; also that dentists at present are making some mistakes and that he wished to show some of his. He wished also to counteract the desire of some dentists to extract all pulpless teeth and to aid those who were trying to emphasize the importance of the preservation of the periapical tissues.

In connection with some slides the speaker stated that the presence of multiple foramina makes no difference in the technic because we are interested only in the removal of the pulp down to where the cementum begins and in filling the canal, and have nothing to do with the tissue beyond the pulp. Beyond the pulp, in the cementum, lie the blood vessels which supply the pulp. The dentine does not close the canal, but in many cases the canal is completely closed by the cementum.

He then showed radiographs of two teeth in which some of the filling material had projected through the root into the surrounding tissues. He said that he would rather the filling material had not gone through. He thought it might act as an irritant to the surrounding tissues. If we destroy the periapical tissues, we destroy nature's method

of resistance and recovery. If we preserve the health of the periapical tissues, they will continue to function. The periosteal tissues are very susceptible to injury. The methods of pulp removal have often been injurious to the periapical tissues, either through the use of strong drugs or by forceful instrumentation.

Many of the cases of pulp removal by means of cocain pressure anesthesia show, by radiographic examination, areas of periapical tissue change, some immediately afterward and some within a few months. The areas vary from simple dark lines about the apex to large areas which indicate a little bone absorption. Where the pulp was exposed or nearly exposed and was immediately removed, involvement of the periapical tissues nearly always occurred. This technic involved the cleaning out of the cavity, the disinfecting of the dentine, and the removal of the pulp under pressure anesthesia. In view of our present knowledge such a technic should be regarded as foolish. But how about five years ago, or two years ago?

Where an antiseptic dressing was sealed into the cavity twenty-four hours before pulp removal and the pulp removed at a second sitting, the periapical tissue nearly always appears normal. This forces one to the conclusion that in all cases where the pulp is to be removed under cocain pressure anesthesia, the removal should be preceded by an antiseptic dressing which will have time to sterilize the pulp, so that the operator will not force any infection through the foramen.

The solution used in cocain anesthesia is frequently too strong. Cocain is a general protoplasmic poison. Hypodermic injection of solutions stronger than 5 per cent may result in tissue changes which show in a necrotic condition. Many of us were taught to use cocain solution without measuring the strength of solution. We dissolved the crystals of the alkaloid in some water, saturated a piece of cotton in the solution and used that. It may have been greatly in excess of 5 per cent.

Infiltration, or block anesthesia, seems to be the safest measure in pulp removal. Even then, antiseptic dressings should be sealed in before the pulp canal is filled. Phenol and strong alkalies have been responsible for some of the destruction of tissue which shows in the radiograms. In connection with this part of the subject the speaker showed a slide illustrating a case in which phenol had been used. There was a radiolucent area around the foramen and he thought that the phenol might have destroyed the periapical tissues. He did not believe that it was possible for an infection to destroy the tissues in the course of six days and there had been no disturbance to indicate the action of infection. Two years later the area had not filled in. On the opposite side of the same mouth was a vital molar with a radiolucent area around both roots.

The speaker then showed slides illustrating two upper centrals from which the pulps had been removed by pressure anesthesia. The teeth were sound but were desired as abutments. In one case a little of the root filling projected through the foramen. Even though great care had been used at every step of the operation, both teeth showed radiolucent areas at the apices, two years later. It was evident that there was infection present. The speaker could not say whether the infection had been forced through the foramen or he had merely destroyed the periapical tissues and given a chance for an infection to arise from a different source.

If the areas we speak of as infection areas are not caused by our treatment, we can blame the condition upon something else; but if our treatment is not so perfect as to prevent infection, we must study our methods.

Canal fillings should be thoroughly condensed so as not to leave space for bacteria. It is of the utmost importance that canals should be completely filled.

The speaker preferred iodine as a treatment for pathological periapical tissues.

Allied Dental Council

The new headquarters of the Allied Dental Council, located at 425 Lafayette St. (near Astor Place), New York, N. Y., will be opened February 4th, 1924, to all the members of the dental profession.

This place will consist of the following:

Lecture hall with a seating capacity of one thousand. Fully equipped gymnasium, including shower baths. Large amphitheatre for post graduate work and clinics, also a public clinic with operating and prosthetic rooms.

In the lounging room there are a number of booths rented by prominent manufacturers of dental merchandise to be used as a permanent exhibit.

The Allied Dental Council cordially extends an invitation to all the members of the profession to visit their beautiful headquarters the week of February 4th to the 9th, inclusive.



Oral Sepsis in Children*

By Henry S. Dunning, B.S., M.D., D.D.S., New York

The mouth is the most unclean cavity, bacteriologically, with which we have to deal. It harbors over one hundred different varieties of bacteria and is subjected to greater trauma than any other region. Thermal changes in the form of food, hard and soft, medical agents, mechanical abrasion, and poor dentistry give the ever present bacteria plenty to do. On account of the conditions mentioned above, the buccal tissues, including the maxillary bones and mandible, often become infected. There are, generally speaking, three methods in which infections may enter the deep tissues of the jaws: first, the pericemental route, beneath the gingival flap; second, the intradental, within the tooth, through the dental nerve, or pulp canal; third, the hematogenous. The first two avenues are increased by the number of teeth present. In other words, the more teeth an individual has the more susceptible he is to oral sepsis for he has a greater line of defense to keep in repair. He has a larger area of gingival membrane to keep healthy and he has more dental nerves or pulps that must be kept vital.

It is more difficult for the child to keep up his first line of defense against the enemy, infection, than the adult. The resistance, as a rule, is not so good, and in the mouth the dental organs are in the developmental stage, with many irregularities that provide comfortable living quarters for bacteria. For this reason the average child finds it hard to keep his mouth clean. He is handicapped. The adult may appreciate the importance of oral hygiene; the child does not. The adult can often visit a dentist; the child can, too, at times, but does he receive the proper treatment that he requires? This last question I shall try to answer later. For the reasons given above, oral sepsis in the child is most common.

St. John Steadman† states that eighty per cent of all children suffer from oral sepsis, that it is the most common of all chronic diseases. He also believes that chronic disease in the child, the effects of which spread over a period of years, must have a profound influence on its mental and physical growth, and he shows that many systemic disorders are traceable to oral sepsis. He calls attention to the fact that anemia, general, mental and physical deterioration and loss of weight are due to unclean mouths. Colyer, in 1910, I believe, was the first to weigh children before and after the removal of infected teeth. He found that there was frequently a marked increase in the weight of a

* Reprinted from the New York Medical Journal and Medical Record for August 1, 1923.

† St. John Steadman; Lancet (London), 1920.

child after extraction and that this increase was too great to be ascribed to normal increase due to the growth of the patient. Rapid increase of weight does not always occur after the removal of the diseased teeth, as there may be other foci of infection that would have the same effect as infected teeth. He explains the loss of weight by the fact that children do not sleep well when dental irritation or pain is present. He has many charts and case histories to show rapid increase in weight upon the extraction of septic teeth. He also says that proper mastication is lost, as the child will not use tender, painful, infected teeth, and either refuses much of his food or swallows it before it has been properly masticated. The dental condition has often interfered with the sleep of the child for months unless the mother is observant, for the child does not always complain. Colyer further explains the loss of weight by the fact that infected teeth cause gastrointestinal disturbances, the main symptoms of which are gastric pain and diarrhea of an offensive character. He also cites fretfulness, night terrors and loss of appetite, which result in marked pallor of the face. He says: "If you take thirty children arranged in three groups, ten with all their teeth present and both teeth and mouth perfectly healthy; ten with most, or all, of their teeth removed but their mouths otherwise healthy, and the remaining ten with septic teeth and inflamed mucous membranes, it will be easy for the trained eye, aided, if you like, by the scales to pick out the third group of children, but it will not be possible to separate the other two." He goes on to say that the average physician is apt to treat the patient for gastrointestinal troubles first without paying much attention to the patient's mouth. He cites the case of a child who was treated for gastritis for eleven months by a physician who disregarded the fact that the little patient had two badly abscessed molars. The gastritis cleared up shortly after their extraction.

Dr. H. Walker calls attention to the effect of dental disease in nursing women. He says that in many instances the infant loses weight when the mother has septic teeth. He goes into this question in detail and has about two hundred charts of cases showing that the infants generally gain weight upon the extraction of the mother's septic teeth. Dr. Walker says also that it is important to see that there is no septic material in the child's food and this can be done to a great extent by giving him a clean mouth.

Billings says, "The focus of infection which undoubtedly causes the streptococcus viridans bacteriemia and chronic malignant endocarditis is often from an alveolar abscess." Of this we have had numerous clinical examples. Coincident cultures from the alveolar abscess and the blood have yielded strains of the streptococcus viridans. When these nascent cultures were injected intravenously into animals,

typical endocardial lesions have resulted. Billings says, further, that the deeper the infection is seated in the tissue and the greater the pressure of the accumulative bacterial products, the larger the amount of absorption. The tissue in which the infection occurs is also important. Mucous membranes absorb easily. An abscess enclosed by bone gives little chance for infiltration or extension; therefore, the pressure is great and the bacterial products are absorbed readily.

On account of the fact that most deep dental apical infections are locked in the spongy vascular bone where there is poor drainage, I feel that dental infections often do more harm than infections of the tonsils, as the latter drain more freely. If there is a sinus, the pressure is decreased and the amount of absorption is diminished. When abscesses or other lesions discharge their exudates into the mouth, they reach different parts of the alimentary canal where a new focus may be formed, especially if the pus supply is long continued, but secondary lesions may in turn also become foci for further and more general infection. Such conditions must not be mistaken for primary causes, but should be removed so as not to prolong and intensify focal disease.

We may also have other conditions, such as pharyngitis, otitis media and meningitis, formed through continuity of tissue. Some clinicians do not pay much attention to swollen submaxillary glands in children. Chronically swollen glands are a distinct detriment to the child. Such glands often remain large for a long time, become tender readily, and do not function as well as normal glands. Such glands are a handicap to the patient and these damaged organs are likely to break down at a later date if untreated. We should find out from whence the infection comes and remove its source, whether it be in the tonsils, the teeth or elsewhere; they often come from the teeth. Lymph drainage of the teeth and jaws is important.

Cleanliness will prevent oral sepsis, but cleanliness in the average child is a hard thing to obtain and to maintain. Many children have a bad start as regards their teeth. Many mothers wash their children's hands oftener in one day than they do their teeth in a week, and I believe that dirty hands are less dangerous than a dirty mouth. It is a tedious and irksome procedure to clean the teeth of children; to obtain the best results, one must make a sort of game of it and the parent must at times offer prizes for the cleanest teeth each week. The child must become familiar with the toothbrush almost as soon as the first teeth appear. The parents must see to it that the teeth are brushed carefully twice a day at least, and it is dangerous to leave it to the nursemaid, however trustworthy she may be. At an early age, say three to four years, the child should be introduced to another nurse who, we hope, is going to reduce the amount of oral sepsis by one-half. The nurse I have reference to is the dental nurse, the majority of whom clean teeth

much better than the average dentist and can handle these little tots more easily than can mere man. Children should be taken to the dental nurse or the oral hygienist twice a year and if this habit is started early they become so accustomed to the appearance of a dental office that it never holds any terrors for them.

Many believe that pyorrhea can be prevented absolutely if patients receive early and regular treatment at proper intervals all their lives, and that dental caries can be prevented to a very great extent. It should be our endeavor to prevent dental nerves or pulps ever becoming infected. We should not allow teeth to become nonvital, for as yet a vital tooth does not enter into the pathology of the mouth. We can prevent all these conditions in the children of the rich. It is being done every day. But what is being done for the poor? What kind of dentistry does a poor child in a large family get? He gets no preventive treatment, and is lucky if he gets to a clinic in time for extractions before he is in pain, and he is also fortunate if, when he gets there, he receives the proper treatment in a way that does not strike terror to his poor little soul and makes the operator forever his enemy. We need clinics and more clinics for children.

Our chief problem is what to do *now* to help the child. The treatment of these conditions is surgical. It takes considerable courage to condemn many teeth in a child and I believe that most dentists lack this courage to a great extent. There is poor cooperation in this direction between the dentist and the physician. The physician sometimes orders teeth to be extracted and cannot get the dentist to perform the operation. He wants to wait until the "swelling goes down." It happens also that the physician tells the dentist to wait until the child "gets better." Neither is anxious at times to take the responsibility, and between the two there is nothing done until the infection has gained considerable headway and a good deal of damage has been done. A virulent tooth infection can cause much destruction in a short time.

Children as a rule take gas poorly and few approve of this anesthetic for very young children. I believe the open mask with ethyl chloride spray or ether with the tin mask is the better plan. Less nausea and vomiting will result if the anesthetist is particular about the amount of anesthetic used, and frequently the patient can be sent home in an hour or two. Deciduous teeth sometimes infect the permanent and great care must be taken to get good drainage for the erupting second teeth and to drain the surrounding bone and soft tissues. Care should be taken in extracting the first teeth not to injure the second teeth just below or just above, as the case may be. In closing, I wish to make a plea for a great dental infirmary for children in this city on the lines of the Eastman and the Forsyth clinics, where all kinds of preventive treatment can be given for these mouth conditions.

Dental Reclamation Through Medical Revolution*

By John Bell Williams, Ph.G., D.D.S., Richmond, Va.

Professor of Dental Pathology, Medical College of Virginia, School of Dentistry

"I have always thought it a greater happiness to discover a certain method of curing, even the slightest disease, than to accumulate the largest fortune."—Sydenham.

With the trend toward organized group practice in our hospitals, the necessity for procuring the benefits of dentistry has been so amply displayed that it would appear presumptuous for him whose name is here subscribed to imagine himself capable of adding anything new to so exhausted a subject. This necessity in the treatment of disease is not at this time subject to controversy!

Step by step, dentistry and medicine have developed apart and have come back to the same road from which they both started amongst the early Egyptians when there were "those practitioners for the eyes, those for the head, some for the teeth, others for the belly and for occult maladies."

According to tradition, dental surgery had its origin with Aesculapius, the god of medicine. Hippocrates invented forceps and other dental instruments and established principles of interdental and intermaxillary fixation for treating fractures of the maxilla and mandible which are used by modern practitioners. These principles of Hippocrates have stood the test of the ages, being proven anew with each recurring war. Although they strongly opposed bandaging, there are those who still cling to this antediluvian method of extra-oral fixation. One would almost suspect such persons of cherishing a surreptitious belief in "touching" for "the King's Evil." Aristotle included the mouth in his studies. It may have been for purely personal reasons that the importance of this indispensable factor to politics was perceived, but it was for scientific reasons that his research was pursued. Cornelius Celsus emphasized the danger of the performance of mouth operations by unskilled men. While Galen contributed much to dental knowledge, his error in dubbing the pulp "nerve" remains as a monument to ancient science and as an antiquity to modern science.

Abulcasis, the medieval genius of Arabian surgery, attached great importance to scrupulous mouth hygiene and the early treatment of pyorrhea, while the English representative of this period, John Gadsden, recommended the application of cow's dung to correct dental

*Read before the Virginia State Dental Association in Richmond, Va., and reprinted from the Virginia Medical Monthly, June, 1923.

disorders. However, we do not consider this seriously, regarding it rather as an Englishman's weakness for advertising all products of John Bull than as a constructive step in dental history. The greatest surgeon of the middle ages, Guy de Chauliac, was the first to recognize dentistry as a specialty of medicine, but his treatment of the medical offspring thus sent into the world to gain his spurs, was rather of tolerance than serious consideration. Hence, dentistry may be considered the forerunner of the modern tendency toward specialization in medical branches and, up to recent years, has been treated by the parent profession with the condescension bestowed upon dissenters.

During the sixteenth century Fallopius gave to us an account of the dental follicle and Eustachius occupied himself in the study of the teeth writing the first book on their anatomy. Ambrose Paré, the father of modern surgery, acquired his first technical skill from the performance of mouth operations. The layman's attitude toward the profession during this period was anything but complimentary, for Shakespeare designated the dentist as a "tooth drawer" and described his profession as "a kind of unconscionable trade, because his trade was nothing else but to take away those things whereby every man gets his living." An interesting commentator relates that surgeons as "uneducated men and associated with barbers as well as apothecaries were prohibited from practicing physics." Even prior to this Chaucer had not spared the physician and his description is anything but flattering. "The English physician according to the poet was a man addicted to astrology and magic; glib of speech, with abundant assurance; in league with the apothecary to make the most out of his patients; indifferent to religious matters; avaricious to acquire and eager to keep." But these comments are mild, if we may be permitted to use Moliere's comedies as a mirror of the French mind, when he holds the whole medical faculty up to ridicule. While we do not deny his courage, we cannot admire his taste. Regardless of the condition of the medical art at that time, no man should attack a great profession which has always labored conscientiously in the service of humanity. The expression of such a sentiment as "a dead man is but a dead man, and of very little consequence; but professional etiquette neglected does great harm to the whole body of physicians," may have been immensely amusing to the vulgar populace but immensely abusing to serious thinkers.

Dentistry of the twentieth century is the product of American dentists. The honor of our first dentist goes to New England, but as a consolation we may remind ourselves of the fact that the first American jury sat in Virginia and that this jury had the honor of convicting a "Doctor" (degree unknown) for horse stealing. In 1840 it be-

came necessary for Drs. Hayden and Harris to establish the first dental school in the world when medical schools refused to include dentistry in their curriculum. For some time it was considered a great disadvantage to be thus severed. But "sweet are the uses of adversity" for the far reaching effects of this separation could not be foreseen by these pioneers. From that time the dental profession of America ceased to be held back by the parent profession and has developed as a separate entity far beyond the dentistry in those countries where the medical school has complete dominance. With the slowly revolving years we were coming back on a higher plane to an age of specialization as the age of our infancy among the early Egyptians. Dentistry had either to be rejected as a menace or accepted as a working part of the medical machine.

With the high development of the profession the desirability of hospital affiliation became apparent and dentists were appointed to hospital staffs. The harvest to be gleaned from such an association was soon indicated by the innovation of ether anesthesia at the Massachusetts General Hospital by Morton in 1846. It is a great source of pride to note that it was in Richmond, Virginia, in 1881 that the American Medical Association met and passed a resolution creating a section on dental and oral surgery. This movement was introduced by S. D. Gross, a luminary of American surgery, and warmly supported by the illustrious Davis.

At the first meeting of this section in 1882, emphasis was laid upon the necessity of establishing chairs on dental diseases in medical schools, to be filled by practicing dentists. This resolution met the same fate as the one passed by the American Medical Association in 1887, providing for those holding the D. D. S. degree to become members. We note in passing that "many are called but few are chosen."

As early as the year 1801, Benjamin Rush reported in his brilliant conclusions the miraculous cure of "rheumatism," "dyspepsia" and other disorders, by the removal of diseased teeth, remarking, "I have been made happy by discovering that I have only added to the observation of other physicians in pointing out a relation between the extraction of decayed and diseased teeth and cure of general diseases. And so it appears that the genius of Dr. Rush lent itself as readily to establishing dental reclamation in medicine as his personality lent itself to establishing Thomas Sully's reputation as a painter.

Although physicians and dentists have builded their history from the same traditions, laws, ethics and a mutual ambition for knowledge and skill to benefit mankind, it was not until the collective influence of the foregoing observations of Rush in 1801, Riggs revolutionary

paper in 1875, the report of a committee on rheumatic fever of the British Medical Association in 1889, and William Hunter's indictment in 1910 was assimilated, that the importance of mouth pathology in the diagnosis and treatment of disease was accredited by the medical profession. As a result, and true to man's immemorial custom, there developed within the ranks of both professions a number of faddists, the culmination of whose genius seemed in a fair way to make the twentieth century go down in history as the Toothless Age. Arrayed against these were the ultra-conservatives whose motto seemed to be "no harm is done where no hurt is felt." But the vast majority of both professions held fast to the steadying influence of the old while reaching out for inspiration from the new.

From a clinical viewpoint the relationship between ill health and defective teeth was unquestionably demonstrated. But the belief that ill health was the result of the inefficiency of carious teeth in the process of mastication, causing indigestion, and that infectious food and the swallowing of pus was the sole factor, was not compatible with the fact that a healthy gastro-intestinal tract can usually tolerate poorly masticated food and as a rule destroy septic material when swallowed. The soil was tilled for the experiments of Rosenow, Billings and others to show the result of chronic mouth infections being distributed by metastasis to remote organs. Following thereupon, the medical parent began to turn a more tolerant eye upon the disinherited offspring. When a child begins to show intelligence a father straightway claims it as his own. And so, as "the old order changeth," the birth-right was restored and a common interest recreated. Thus the day when dentistry was judged in terms of gold crowns and false teeth was relegated to the past, and rests in the archives with that era in medicine when calomel was king and blood-letting the anchor of hope.

At the present time hospital dental service has developed to such an amazing degree that some American hospitals require a dental staff of twenty-five persons. A report on dental needs and dental facilities prepared by the service bureau on dispensing and community relations of hospitals of the American Hospital Association shows that dental service is either definitely established or well under way in more than one-third of the two hundred and eighty-two general hospitals of the United States. On the basis of this survey and the studies of dental work made in connection with other surveys this report emphasizes:

1. "A dentist competent as a dental diagnostician should be recognized with adequate rank on the staff of the hospital, and should be given the necessary facilities such as access to the X-ray and to beds when necessary.

2. "The primary responsibility of the hospital in dental care is the dental diagnosis of patients whose mouth conditions are involved as a factor in the disease for which the hospital accepted these cases and for whom dental treatment is necessary in order that the hospital medical and surgical work shall attain satisfactory results. In other words, a hospital cannot carry out adequate diagnosis and treatment without undertaking dental diagnosis and in some instances, dental treatment also.

3. "A routine dental examination of hospital cases should be included as a part of the physical examination."

In accordance with a resolution passed by the American Dental Association with regard to the development of dentistry in the hospitals of each state, the President of the Virginia State Dental Association, requested that a survey be made of the hospitals in Virginia. A letter was sent to sixty-two hospitals with the following questionnaire: "Is there a regularly appointed or permanently employed dentist on your staff? Does he examine the mouths of all patients? If so, to what extent? If not examined by a dentist, are the mouths of all patients examined by a physician? If so, to what extent? What is the extent of this examination?"

Of the hospitals addressed, forty-eight, or 77 per cent replied. This shows a most gratifying interest in dental service on the part of our hospitals. Fifteen hospitals, or 31.2 per cent, reported a dentist on their regular staff. Three hospitals, or 6.2 per cent, advised that they have under consideration the appointment of a staff dentist. A consultant dentist was acclaimed by seven hospitals, or 14.6 per cent. From the preceding conclusions we see that dental service is actually established or recognized as necessary in twenty-five hospitals or 52 per cent of those answering the questionnaire; this being forty per cent of those addressed in Virginia. Comparing our findings with the survey conducted among the larger general hospitals of the United States, it developed that the hospitals of Virginia, though comparatively small and frequently located in rural districts, are keeping pace with the progress of dental advancement. Encouraging as this may seem, the fact remains that in only nine hospitals, or 18.8 per cent, are the mouths of all patients examined by a dentist.

Further observation of the replies shows that in twenty-eight hospitals, or 60.4 per cent, an inspection only is made by a physician followed by a Roentgen ray examination if deemed necessary. But little mention is made in these reports of a clinical examination or interpretation of the X-ray examination by one trained in mouth diagnosis. From our viewpoint a professional diagnosis cannot be satisfactorily determined except by one so trained, but, of course, every

question has two sides. It makes some little difference to the fly, however, which side of the "tanglefoot" he lights on.

The most surprising fact disclosed in this survey is that in this day of highly developed medical science one-fifth of the hospitals recorded apparently do not consider the mouth as a factor in disease since they report no examination at all. This deficiency has been explained by some as due to "the war," but they neglected to make clear whether they referred to the Spanish-American or the Civil War.

The ideal of our hospitals is no longer merely to put the patient back on his feet; to restore the patient to his normal self is the goal. To realize this ideal, the mouth examination is one of the elements from which the complete diagnosis is made.

"Men have found that mastery comes through limitation of field and concentration of interest and effort; coincident, however, with this increasing division of labor, provision must be made for the synthesis of results of special workers into harmonious wholes. For this integrative function, men of wide training and sympathies, with comprehensive grasp, possessing the so-called encyclopedic type of mind, will be needed more than ever before, to sift the essentials from the non-essentials, to arrange, classify and reduce to manageable volume the total results of special workers." At their disposal must be "those practitioners for the eyes, those for the head, some for the teeth, others for the belly and for occult maladies."

302 Professional Building.

Russian Relief Fund Contributions

The following contributions, received by THE DENTAL DIGEST and forwarded to Dr. Otto U. King, are hereby acknowledged:

Dr. L. R. Hoelzle, St. Paul, Minn.....	\$ 5.00
Dr. Adolph Salgo, Philadelphia, Pa.....	2.00
	<hr/>
	\$ 7.00
Previously reported	209.27
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	\$216.27

Dental Infections

By Weston A. Price, D.D.S., M.S., P.A.C.D.

A BRIEF REVIEW OF TWO VERY IMPORTANT VOLUMES

VOLUME I

Dental Infections, Oral and Systemic, presenting researches on fundamentals of oral and systemic expressions of dental infections.

VOLUME II

Dental Infections and the Degenerative Diseases, presenting researches of clinical expressions of dental infections.

Beautifully printed. Illustrated with plates in four colors. 1056 pages of text, 88 pages of bibliography and index. The two volumes, \$20.00 (not sold separately because of the close integration). Published by The Penton Publishing Company, Cleveland, Ohio.

These remarkable volumes should receive, and doubtless will sustain, critical reviews by different groups of specialists in scientific health service, such as radiologists, histopathologists, diagnosticians and general practitioners of medicine and dentistry. For the great mass of dental practitioners there should be an additional kind of review, one that will tell them in a relatively few plain words what message the books bring to one of their own kind and something of the effect that message may have on their conceptions and practice. This review seeks to do that.

The first effect of the books is to convince the reader that the writer has prepared himself painstakingly for the delivery of his message. Twenty-five years of personal work, the expenditure of \$250,000 and the continuous assistance of a staff of specialists in conducting thousands of experiments form a pretty thoroughgoing course in preparation.

The second effect is that each point in the presentation is buttressed with evidence from experiments in liberal number which seem to have been intelligently performed and interpreted.

The third effect is that, if the presentations in these books are accepted as the standards of practice, many of our most firmly grounded notions must be cast aside and replaced with others which, if not exactly opposite, are at least very different. And at least certain phases of practice will have to be extensively modified and lifted to a plane much closer to the practice of medicine.

The fourth effect will be to increase greatly our responsibility for those of our patients who are breaking in health. We must know more

about systemic diseases, such as influenza and heart and kidney troubles, and more about overloads and their interaction with infections. And to some of us there will come a sense of personal touch when we learn that the degenerative diseases of middle life are increasing and that in most cases it is a pus germ that enables them to deliver the last premature but effective and fatal kick.

Perhaps the first of our firmly rooted notions to go overboard will be a confidence that a roentgenogram accurately portrays the conditions existing about a root. The author shows, by what appears to be conclusive evidence, that such is not the case, and that very grave pathological conditions may exist without their picture appearing in the roentgenogram. Many keen observers have been losing confidence in the diagnostic value of the x-ray. This showing will further lessen confidence.

We have felt that patients with large areas of absorption about root ends have been in much greater systemic danger than patients with non-vital teeth which showed little or no absorption; the bigger the hole the greater the danger.

The results of a long series of investigations appear to show that patients with large periapical "holes" exhibit fewer systemic complications and are apparently in much less danger than those with non-vital teeth and no radiographic evidence of periapical tissue destruction. The conclusion is that when the body quarantine is effective, the battle between the infection and the defensive forces is fought in the periapical region. When the body quarantine is low or broken, the battle is transferred to the weakest organ of the body. This may be the heart or the kidneys.

Chapter XXXVIII offers evidence that an infected tooth may furnish a focus of a different sort from any other focus in the body because the organisms are well protected from the defensive forces of the host while the organisms and their products have easy access to the body.

We have thought of patients as much alike and of infection as differing in virulence, in kind or in quantity. Dr. Price's studies seem to show that people can be divided into three groups, one consisting of those not systemically susceptible to periapical infections, a second of those perhaps not originally susceptible but rendered susceptible by some sort of systemic overload, and a third of those who are readily susceptible.

Other studies seem to show that it is practically impossible to sterilize infected tooth structures within the mouth without injuring the supporting structures; that most root canal filling materials tend to shrink or become infected; and that streptococci exhibit such marvelous powers of adaptation that they will thrive on materials heretofore supposed to be germicidal, such as 20% alcohol, 1 to 10 iodo-

form saturated in alcohol, 1 to 800 phenol and 1 to 200 thalium sulphate.

The high mortality rate in influenza, from pneumonia and heart failure, is at least partly explained by the fact that a high defense and adequate quarantine may be broken by influenza and the injured lung tissue may be filled with an exudate which forms an excellent culture medium for streptococci. Hence, streptococcal pneumonia develops readily in the presence of a dental infection plus pneumonia. When the heart tissue is weak, the heart is likely to be involved.

Chapter XLIV discusses a subject of no small personal interest to the dentist himself, especially if he is approaching middle age. Most of us appear to die slowly, from degenerative diseases, with a gradual breaking down over a long period and then a rapid decline. The evidence in this chapter appears to show that these degenerative changes in the blood vessel walls and kidney structure and function are the result, at least in part, of the presence of toxic substances in the circulation for a long time.

The message of the first part of Volume II is so tremendously important as to justify the purchase and study of the books by every dentist. In brief, it is that the dental infection most likely to produce a heart or systemic involvement will, as a rule, give no local oral discomfort because the individual's capacity for reaction is diminished. As the capacity for reaction improves, the tooth may become tender. It appears that the removal of the source of infection may cause a great improvement in many heart cases formerly thought to be incurable and destined soon to be fatal.

A new contribution to the pathology of tuberculosis is offered. It appears that persons in whom infection about the teeth produces extensive bone destruction are more susceptible to tuberculosis than those persons who show little bone destruction or a condensing osteitis.

Perhaps few chapters will be more important to dentists of middle age or to their patients who have any form of kidney trouble than Chapter LXIII, which discusses the relation of dental infection to kidney function. The problem of inherited susceptibility is allowed for, but even then one is confronted by the evidence that many persons with unmistakable signs of injured kidney function show remarkable improvement when the sources of dental infection are removed.

Disturbances of the functions of the digestive tract are carefully studied. It is shown that dental cysts so obscure as to be unknown to the patient contain substances which produce violent disturbances of the digestive tract when injected into rabbits. A patient's tooth planted beneath the skin of a rabbit induced an acute appendicitis.

One cannot study these volumes, either from the point of view of the welfare of his patients or of due care for his own vigor and life

as age approaches, without feeling that the principles in these books must be given the most searching test and that, no matter how they may be at variance with theories previously held, they cannot be lightly regarded or disregarded.

It will not be surprising if one of the first effects of these volumes is the loss of a good many teeth from dentists' mouths. For so intelligently has the work been done, and so impressive is the evidence in support of the new conclusions, and so temperate are the conclusions that many a dentist who is approaching middle life and is beginning to experience systemic or localized degenerative changes will promptly have removed from his own mouth any teeth which he knows have ever been putrescent, even though they may be quite comfortable in the present.

It is hoped that this very incomplete and imperfect review may persuade many dentists to add these volumes to their library and the knowledge to their armamentarium.

G. W. C.

ANOTHER GOOD BOOK

Ethics and Jurisprudence for Dentists, 1923, by Edmund Noyes.

A second edition of this book has just come from the press. To most of us who have been long in the profession it is sufficient to write "Edmund Noyes," but for some of the very young men it may be necessary to say that he is Professor of Ethics and Jurisprudence at Northwestern University Dental College and that he bears the titles D.D.S. and F.A.C.D.

If the possession of a fine personal character and a history of a lifetime of service to one's fellow men be qualifications for the writing of a book on ethics, probably few men in our profession ever have been better qualified for at least certain portions of the task than this author.

The book is divided into three portions, the first of which describes ethics in general. It is interestingly and instructively written and will provide both entertainment and profit for the man whose look is upward and whose stride is forward.

The second portion of the book is devoted to professional ethics. In this portion of the book much sound advice is given to members of our profession. Many of the elements of success are listed and described. A sound basis for fees is also given. The writer believes that in many localities the public would benefit by an advance in fees.

The Codes of Ethics of the Illinois State Dental Society and of the American Dental Association, as adopted at Los Angeles, 1922,

are given, and also the principles of the Code of Ethics of the American Medical Association.

The third part of the book is devoted to dental jurisprudence and contains much interesting and valuable information.

The time spent in reading this book will be well invested and it may well find a place in every dental library.

G. W. C.

Westchester Dental Society

(Affiliated with the Allied Dental Council)

Regular meetings held on the third Tuesday of each month from October to May, inclusive, in the Yonkers Chamber of Commerce, 35 South Broadway, Yonkers, N. Y.

The next regular meeting of the Westchester Dental Society will be held at the Yonkers Chamber of Commerce, 35 South Broadway, Yonkers, N. Y., on Tuesday, February 19, 1924, at 7:30 P. M.

At this meeting Dr. John Jacob Posner will lecture on "Gentle Dental Anesthesia." The lecture will be illustrated by a number of very interesting lantern slides, recently prepared, and calculated to cover the subject of local anesthesia from every angle. The various injections in Conduction Anesthesia will be demonstrated on a complete wet specimen.

In addition to his lecture, lantern slides and demonstrations, Dr. Posner will exhibit a new movie film, showing, in detail, Dr. Guido Fischer's technic in local anesthesia.

The discussion of Dr. Posner's paper will be opened by Dr. Clinton T. Vail and Dr. I. Linder.

Preceding the lecture, a table clinic on the subject of Radiography will be given by Dr. J. Edw. Berger of Yonkers.

A. S. ROCHLIN, D.D.S., *President*,
205 Flagg Bldg., Yonkers, N. Y.

H. ROSENBERG, D.D.S., *Secretary*,
15 Palisade Ave., Yonkers, N. Y.



DENTAL LAWS

Summary of Dental License Requirements Throughout the World

By Alphonso Irwin, D.D.S., Camden, N. J.

IDAHO, U. S. A.

The dental laws are dated 1899, 1908, 1919, 1920, 1921. The English language, civil and dental supervision, biennial examinations and registration with the Bureau of License in the Department of Law Enforcement are required.

The Board of Examiners consists of S. S. Evans, President, Preston; W. F. Gigary, Secretary, Caldwell; B. H. Hudson, Blackfoot; P. F. Smith, Rexburg; F. W. Cretchfield, Boise, Idaho. The Bureau of Licensure in the Department of Law Enforcement appoints examiners for every examination; "they may be re-appointments or a new Board."

Graduation from a reputable dental college, or license from State Board possessing standards equal to Idaho State requirements. Theoretical and practical examinations are held upon the subjects taught in a standard dental college, and such other kindred subjects or matters as may from time to time be deemed necessary and proper by the Department; fee \$25.00. Re-examination if necessary, \$10.00; each application and renewal must also be accompanied by \$1.00 additional. "Our Board is ready to enter into reciprocal relations with States having as high requirements as Idaho."

Time of meeting, January and July, at Boise. Failure to record license within six months of date of the issue thereof works forfeiture of the same. Annual renewal of license before July first, fee \$2.00.

Paul Davis, Director; Harry L. Fisher, Acting Director; Bureau of License, Department of Law Enforcement.

State House, Boise, Idaho.

ILLINOIS, U. S. A.

The dental laws are dated 1881, 1905, 1909, 1915, 1919 (Repeal of biennial registration).

The State Board of Dental Examiners consists of J. W. Gluesing, President, 304 Reliance Building, Moline; F. B. Olwin, Secretary, Robinson; T. B. Reagin, Du Quoin; T. A. Broadbent, 25 E. Washing-

ton St., Field Annex, Chicago; Horace B. Tharp, 11205 Michigan Ave., Chicago, Illinois.

The Department of Registration and Education and Dental Supervision, the English language, registration and examination are required.

Application fee \$20.00; license fee, if successful in passing the required examinations \$5.00. Diplomas are required from a fifteen-unit high school and a reputable dental college. The dental law provides for a State examination certificate for the preliminary education, 15-unit high school standard, for those passing the State examinations successfully.

Theoretical and practical dental examinations are conducted in the subjects and with the tests used in standard dental colleges. The examinations are usually held during the last week of June and November, in Chicago.

Reciprocity is encouraged, with a view of interchange of standards not only to encourage uniformity, but to elevate the standard of the profession.

A. M. SHELTON, Director Dept. Reg. and Ed.,
MAX MURDOCK, Asst. Director,
V. C. MICHELS, Supt. of Registration,
Springfield, Illinois.

State House, Springfield, Illinois.

RECIPROCITY

Reciprocity Act, July 1st, 1915. Section 11: When a License May be Issued Without Examination to Legal Practitioner from Another State:

"Any dentist who has been lawfully licensed to practise in another State or Territory which has and maintains a standard for the practice of dentistry or dental surgery equal to that now maintained in this State, and who has been lawfully and continuously engaged in the practice of dentistry for five years or more immediately before filing his application to practise in this State, and who shall deposit in person with the Secretary of the Board, a duly attested certificate from the Examining Board of the State or Territory in which he is registered, certifying to the fact of his registration and of his being a person of good moral character and of professional attainments, may, upon the payment of a fee of twenty-five dollars (\$25.00) and after a satisfactory practical examination demonstrating his proficiency, be granted a license to practise dentistry in this State, without being required to take an examination in theory. Provided, however, that no license shall be issued to any such applicant, unless the State or Territory from which such certificate has been granted to such applicant shall

have extended a like privilege to engage in the practice of dentistry within its own borders to dentists heretofore and hereafter licensed by this State, and removing to such other State; and provided, further, that the Illinois State Board of Dental Examiners shall have power to enter into reciprocal relations with similar Boards of other States whose laws are practically identical with the provisions of this Act." (As amended by act approved June 25, 1915, in force July 1, 1915.)

Section 12. *Practitioner Leaving State to Receive Certificate.* "Any one who is a legal and competent practitioner of dentistry or dental surgery in the State of Illinois, and of good moral character, and known to the Board of Dental Examiners of this State as such, who desires to change his or her residence to another State or Territory, shall, upon application to the Board of Dental Examiners, receive a certificate over the signature of the president and secretary of said Board, and bearing its seal, which shall attest the facts above mentioned, and giving the date upon which he was registered and licensed." (As amended by the act approved June 25, 1915, in force July 1, 1915.)

Section 13. *Fee for Issuing Certificates Under Sections 11 and 12.* "The fee for issuing a certificate to a legal practitioner of this State, under section 12 of this Act, shall be five dollars (\$5.00), and in each case the fee shall be paid before the certificate shall be issued." (As amended by act approved June 25, 1915, in force July 1, 1915.)

INDIA (MADRAS)

No license is required to practise dentistry in India, and there is no examining board. "There are no laws dealing with the practice of dentistry in India. There are openings for dentists, nearly every large city in India having at least one European dentist. The status of an American dentist is the same as that of the English. American university graduates have a good standing in the profession."

INDIA (BOMBAY)

Address Dr. Seldon B. Stout, Datvobhoy Mansions, Bombay, India, for information regarding local conditions and dental license requirements, including municipal taxes, living expenses, climate and dental needs of the population, fees obtainable, and financial prospects of prospective clients.

INDIA (FRENCH)

See FRANCE for the dental laws.

INDIANA, U. S. A.

The Board of Dental Examiners comprise: Robt. R. Gillis, President, Hammond; H. C. McKittrick, Secy.-Treas., Indianapolis; John M. Hale, Mt. Vernon; C. J. Burris, Washington; Scott W. Shields, Brownstown, Indiana.

The dental laws are dated 1879, 1887, 1899, 1903, 1913, 1917. The English language, dental supervision, registration and examination are required from all applicants for a license to practise dentistry. June and November examinations are held in Indianapolis, fee \$29.00; re-examination, if necessary, \$10.00.

Among the requirements are a State Superintendent's certificate of preliminary education or college entrance credentials, and a diploma from a recognized dental college. We quote the following: "The written examinations shall be upon the following subjects: Anatomy, Physiology, Histology, Materia Medica, Therapeutics, Anesthesia, Bacteriology, Oral Surgery, Orthodontia, Prosthetic Dentistry, Operative Dentistry, Crown and Bridge Work and Oral Hygiene, Chemistry, Metallurgy and Pathology."

Operative requirements consist of the following: "Each applicant is required to prepare cavities and insert one gold and one amalgam filling, and may be called upon to perform any other operative procedure at the discretion of the Examiners. Applicants must come provided with patients and all necessary materials and instruments, including dental engine."

Prosthetic requirements: "Each applicant shall come provided with the casts of an edentulous mouth, properly mounted on an anatomical articulator, with a full set of 28 plain teeth for mounting in an anatomical relation, showing three-point contact on the same, in the presence of the Board; also with articulated casts of full natural denture, for one tooth, of which he will be required to make one gold shell crown with carved cusps, the point for grading which will be 1, 2, 3, 4; also with a Richmond Crown, with or without a band, invested and dried ready for soldering. The soldering must be done in the presence of the Examiners. The Richmond Crown shall have been previously fitted to a natural root. The crown, when finished, shall be placed upon the natural tooth-root for examination by the Board. Reciprocal relations have been discontinued.

"An average of not less than 75 per cent with the minimum of 65 per cent on any written subject is required, and a grade of not less than 85 per cent on the clinical work in Operative and Prosthetic Dentistry, provided, that if the applicant shall make a general average of 85 per cent and shall fall below 65 per cent in not more than two of the theoretical subjects, he shall be entitled to registration."

Annual registration with the Secretary of the Board of Dental Examiners prior to December 31st; fee for renewal of license \$1.00.

H. C. McKittrick, Secretary-Treasurer, 605 Hume-Mansur Building, Indianapolis, Indiana.

Verified November 6th, 1923.

INDO-CHINA

For dental practice information, consult *China*, under the sub-title of *Indo-China*; also see *France*.

IOWA, U. S. A.

The Board of Dental Examiners comprise: C. M. Work, Ottawa, President; George Brooks, Vice-Pres., Greenfield; C. B. Miller, Secy.-Treas., Des Moines; F. W. Conover, Decorah; H. P. White, Sioux City.

The dental laws are dated 1882, 1897, 1900, 1906, 1907, 1913, 1917. The English language, dental supervision, registration and examination are required. June and December examinations are held in Des Moines, or Iowa City, as announced by the Board prior to the meeting; fee \$20.00, which with a late photograph of the candidate and all credentials, such as diplomas, certificates, and licenses, must be presented to the Secretary at least ten days before the examinations. Graduation from a four-year course accredited high school, 15 units, or its equivalent, graduation and a diploma from a dental school recognized as reputable by the Iowa Board of Dental Examiners. The theoretical examinations are conducted upon the subjects taught by a recognized dental college, and practical demonstrations of skill are required, as determined and announced by the Board, from each applicant, including reciprocity candidates. Reciprocity with the District of Columbia, Kansas, Missouri, Nebraska, Ohio, Tennessee, Vermont.

All licenses must be recorded with the County Clerk of the resident County within six months of the date of issue.

Dental Hygienists are examined and licensed, if successful, in passing the required tests; fee \$10.00.

Bi-ennial registration with the Secretary of the Board.

C. B. MILLER, Secretary-Treasurer,
26 Fleming Bldg., Des Moines, Iowa.

Section 2600-d. *Examinations, License, Record Books, Fees.* The Board shall at any regular meeting, and may at any special meeting, examine applicants for a license to practise dentistry as to their knowledge and skill in dental surgery, and shall issue to such applicants as are found to be qualified a license authorizing them to practise dentistry. The license shall be signed by each member of the Board, attested by the president and secretary, and have the seal of the Board affixed thereto, and shall be presumptive evidence of the right of the holder to practise dentistry in the state. The name, age, nativity, location, number of years of practice of the person to whom a license is given, and the number of the license, and the date of the registration thereof, shall be entered in a book kept in the office of the secretary of the Board, which shall be open to the inspection of the public, under proper restric-

tions as to its safe keeping, and the number of the book and page containing such entries shall be noted on the face of the license. Each applicant for a license shall be a graduate of a reputable dental school, which is recognized as such by the Board of Dental Examiners, and pay to the Board a fee of twenty dollars before a license is issued. (28 G. A., ch. 91, par. 4.)

IRAC

Kingdom of the Irac is the Arab name for Mesopotamia, inhabited chiefly by Moslem population of nearly three million. The capital is Bagdad. King Feisal rules under a British mandate and a Treaty covering the next twenty years, signed Oct. 10th, 1922.

For details in regard to the practice of dentistry, address Sir P. Z. Cox, High Commissioner of Great Britain, Bagdad, Irac.

IRELAND

There is no dental law peculiar to Ireland, inasmuch as the Dental Acts of 1878, 1886 and 1921 of the United Kingdom, cover this country as well as Scotland, England and Wales, and all license requirements, therefore, are the same.

ISLE OF PINES

The Isle of Pines is under the jurisdiction of the Cuban Republic and is governed by the same dental laws as Cuba. In order to be able to practise dentistry in Cuba, "it is necessary for the applicant from a foreign country to present a diploma from a college in good standing, to the Examining Board of the University of Havana; this diploma to be duly legalized by some Consular Officer of Cuba. Then the applicant is admitted to the examination at the University, and if not familiar with the Spanish language he is allowed to use an interpreter."

For further details, refer to *Cuba*.



DENTAL ECONOMICS

Standards of Living

EDITOR'S NOTE: The most excellent article which follows appeared first in The Commercial and Financial Chronicle, New York. It was reprinted by The Babson Statistical Organization and sent to clients, with the following very pertinent comment: "It contains much straight thinking which it is well for all of us to reflect upon at this time."

It is particularly pertinent for all professional men to reflect upon, because in the professions the standards of living tend to advance continuously but imperceptibly until they often consume the financial reserve or prevent the accumulation of such.

Our associations, our training, our imaginations and our ambitions pull us forward. So far, so good. But let us try to keep them from pulling us too far or too fast.

Economists are engaged in a search for the root of our domestic commercial and financial troubles. While countless reasons are offered for our disjointed affairs it is constantly maintained, in certain quarters, that we must preserve what some are pleased to term our "American standard of living." This standard no one finds it easy to define. All are agreed, however, that it is much "higher" than that of our forefathers. Only a cursory examination of our social life discloses that many of our former luxuries have become necessities. The measure of truth in this claim is comparative. The social structure compels many expenditures that were unknown in former years. Yet the compulsion is social, and not personal or individual, in many cases. Plain living is not antagonistic to high thinking. Simple pleasures are often more enjoyable than the more complex. Allowing the "spenders" to set the pace for a "standard of living" will always keep many a "nose to the grindstone."

Let us consider a few of the conditions in which we find ourselves. Begin with education. It is the common claim that the breadwinner must have sufficient wages, salary, or permanent income, to "educate his children." But what is this "education"? Our universities are crowded to suffocation; their courses of study expanded to an unheard of degree. Huge endowments are sought; enormous State appropriations demanded. Does any sane view of our social life require a

university education for every son and daughter? We come down the scale and find that colleges and high schools are miniature universities asking and receiving tax moneys never before appropriated; while private institutions of a preparatory character are more numerous than ever before, save a time before "public schools." Passing still downward to our common schools, we find them doing work unknown in the early days, expanding their studies, combining their agencies, seeking new buildings, more apparatus, larger teaching forces, and, of course, more money. The question here is, are we as a people in a social sense getting full value received in educated men and women, in studious and helpful lives, in character that devotes itself to spiritual things, in contentment with things as they are and loyal support of Government as it is? Or, on the other hand, is this educational vision one that breeds discontent, induces undue striving after the fleshpots, inculcates a love of intellectual strife, rather than domestic quietude and spiritual aspiration?

All this questioning is not directed to a curtailment of educational activities but towards their consecrated direction to a "love of learning" for its own sake, and the use of knowledge that it may insure personal happiness regardless of so-called inequalities in the physical conditions of living. For no "standard of living" in a free country can ever be established. To attempt it is tyranny. To seek for it is futile. Education itself is a preventive, so long as the individual has freedom and initiative. Commerce forbids it. What a dollar will buy is comparative—for one it buys meagre necessities, for another trifling frivolities. Yet we have come to believe that in business, in the vocations and avocations of life, we must each have what the others have. If we cannot earn or make a fortune something must be done for us, presumably by the Government. If a neighbor has a car, one must be secured, even if the home is mortgaged. If one firm grants vacations, all must. We have come, in our common, every-day life, to want the best and most of everything. High wages, of course, higher than war-time—for "life is advancing," and we have escaped the decadence of old world centuries. We are never satisfied. Today is not complete in itself unless tomorrow is to be better. Pleasure for everybody and everybody for pleasure.

Observing men in the Middle West can be heard to say—"Oh, the East is prosperous—but the rest of the country is black!" And in the next breath say—"But, things are changed—the truth is the farmer does not work as he once did." Then will follow stories illustrative of changed conditions. The farmer has his automobile, a very serviceable part of his equipment, but too much "the boys" use it for joyriding and for nightly transportation to the village movies. His "hired help" have been inoculated with the eight-hour-day virus and begin late and

quit early. He "gets more" for most products he sells, but pays more for practically all that he buys. He is himself disposed to have the best and most of everything—complains of the price of wheat, but buys bread sent out by the truck load from large city bakeries. And so the story runs. In consequence of increased desire and limited buying power he is disgruntled and disposed to carry his complaints into politics.

Blessings that civilization spreads broadcast along our way are not beneficial if they merely create unsatisfied desires. Some of the greatest scholars, statesmen and spiritual types we have known emerged from humble surroundings into lives of patient toil and thought and in success never forgot their early training. The young man and woman who would be truly great may become so without special education or inherited wealth, for greatness lies in service. The family that lives and works within itself need not fear the social climber, for this often ends in strained finances and an ignoble fall. Poverty is hard to bear, but is no disgrace. Riches do not make the man. Education that does no more than confer degrees for knowledge attained is misplaced. Ever seeking for something "higher," something that is the fad or fashion, something that gives hectic pleasure rather than gentle joy, distorts our social life, disorders the natural economics of our commerce, and puts our business and financial endeavors upon stilted foundations. We want to begin at the top of the ladder and are unwilling to ascend from the ground. Take this thought in all its bearing and will it not explain much of our complaining over "inequalities," over contrasting "standards of living," over rich and poor, over capitalist and working man?



PRACTICAL HINTS

This department is in charge of Dr. V. C. Smedley, 604 California Bldg., Denver, Colo. To avoid unnecessary delay, Hints, Questions and Answers should be sent direct to him.

NOTE—Mention of proprietary articles by name in the text pages of the DENTAL DIGEST is contrary to the policy of the magazine. Contributions containing names of proprietary articles will be altered in accordance with this rule. This Department is conducted for readers of the DENTAL DIGEST, and the Editor has no time to answer communications "not for publication." Please enclose stamp if you desire a reply by letter.

TO KEEP ALUMINUM BRIGHT.—In order to prevent the tarnishing or discoloration of aluminum during vulcanization, burnish tin foil over exposed metal surfaces before pouring plaster. This will positively keep metal bright.

W. M. DOLL.

Editor Practical Hints:

I have a case I am treating, and the one lower cuspid seems to be the pocket that suppurates pus. Have been using a treatment that I received results with before, but this does not seem to respond. The gums are in healthy condition but the X-ray shows pockets in several places. No pus in them except the one lower. There is a little pain most of the time and swelling back of bicuspid.

I write for a remedy you might think would be worth trying. I read of emitin hydrochloride, but wonder if is used much now.

I had an extraction of a lower first molar that was a devitalized molar, and used the conductive anaesthesia, which was perfect, and as the roots were badly decayed I had to use elevators to remove both roots. The next day she returned for post-operative, and the socket began bleeding but stopped before leaving office. Later in evening she had to return, for the hemorrhage began again. She had much pain in this region for three consecutive days, but hardly any swelling. The roots were both out and probably she had infection. What would you advise to do for a case like this, for the pain? I used gauze and Thromboplastin for the bleeding.

J. A. L.

ANSWER.—I think it would be advisable to get clear X-ray picture of this cuspid root to disclose the depth and extent of the pocket and if

possible the presence of serumal calculus that has escaped previous instrumentation. If X-ray indicates too little alveolus remaining supporting the tooth, advise extraction. If X-ray indicates that you should be able to save it proceed with very careful instrumentation to remove all deposits and smooth and polish surfaces of root to bottom of pocket. The surgical removal of the gum flap for the reduction of the pocket is often advisable in these cases. I do not believe emetin hydrochloride or any other medicament is of any real or permanent benefit in pyorrhea treatment.

Guaiacol (one part), olive oil (three parts) applied in the socket on gauze or in the form of a pad over the socket is usually very efficacious in stopping pain, and if held in place with some pressure exerted through the closing of the jaws will frequently check bleeding also. If local application is not sufficient, any recognized sedative preparations may be prescribed.—V. C. SMEDLEY.

Editor Practical Hints:

I noticed in a recent issue of DENTAL DIGEST an account of a patient who is continually complaining of pain in her teeth, signed J. S. K. I also noticed that it was said that such symptoms are frequently caused by pulp stones. My experience has been that such symptoms are more frequently due to Traumatism. I have had cases similar to this, so far as I can judge from the description J. S. K. gives, and I have always been able to give absolute relief by grinding, using the most sensitive carbon paper and the cleanest and best stones. Have recently had patient, girl 20 years of age, no fillings, nice clean mouth, beautiful pearly teeth. This young lady held position in another town (Ry. office) and thought she would have to give it up on account of such continual pain in her teeth. I gave this patient's teeth one good grinding, telling her to return again in 30 days. She never came back, but wrote me that she was entirely relieved, and felt like a new person. Hope this may benefit some one.

W. C. J.

ANSWER.—I think you are absolutely right, and that it is more than likely this case would be relieved by the correction of traumatic stress. We are doing this sort of thing quite frequently in our office of late and I do not know how I overlooked that point in answering J. S. K's question.—V. C. SMEDLEY.

Editor Practical Hints:

Would appreciate very much any advice on this case. Male, 71, 200 pounds, healthy. Trifacial neuralgia on left side for about seven years. Teeth extracted about three years ago; bad case of pyorrhea;

gums healed nicely; had plates made. Since that time has had gold, aluminum and vulcanite upper plates, with very poor retention in all. Tissues seem firm and mouth of good size. Patient complains of the skin of the mouth peeling off as if it had been scalded; the lips also are sore quite a good deal of the time. The neuralgia extends into the upper left ridge, sometimes can hardly touch the ridge with finger, but it makes the gums feel good to massage them.

Patient has consulted physicians and used different mouth washes and medicines with very little if any results.

H. E. D.

ANSWER.—I had one case of this kind for which I made a continuous gum plate (baked porcelain on pure platinum base), relieving generously over the foramina and nerve supply areas to afford relief from compression on nerve trunks. The result was highly satisfactory in this case. I am not certain whether the relief was due to the platinum and porcelain construction of the denture or to the relief of compression of the nerve supply, but I am inclined to think that both things had their bearing upon the situation. I am very much of the opinion that whatever type of plate is worn this relief should be provided, and I am thoroughly convinced that either porcelain or gold would be the preferable material of which to construct the denture.

—V. C. SMEDLEY.

Editor Practical Hints:

I have a very peculiar case on which I would like a little information.

Patient, a young man about 27. Has a bridge on upper left from first molar to cuspid. Shell crown on molar and carmichael on cuspid. Second and third molars have been extracted a long time. The shell crown has a cast clasp connected to a palate bar with a saddle on opposite side.

At what seems to be the apex of the first molar distal buccal root there is an opening in the soft tissue about the size of a small pea. Tooth is not sore to percussion, but he has a pain in the region of the opening. How should I take care of this?

F. F. T.

ANSWER.—X-ray to ascertain if pulp has been removed and canals filled, and whether, if not thoroughly filled, the roots are so shaped as to render a thorough filling practicable. Explore with probe in opening in soft tissue to ascertain whether the end of the root has been denuded. In all probability the canals are putrescent and the opening in the gum is due to chronic suppuration. If this is the case the patient would no doubt be better off with the tooth extracted, but if for

any reason both you and the patient are willing to take the chance of a possible systemic infection from this source and wish to do the next best thing, the canals should be opened up thoroughly and filled as well as possible. Afterwards the tip of the denuded buccal root could be amputated, making of it possibly a fairly safe and serviceable tooth.

—V. C. SMEDLEY.

Editor Practical Hints:

I have a baby boy 17 months old whose teeth are erupting very slowly. At present he has his two upper centrals and the two lower centrals show lumps as though they would erupt soon, but they have been that way several weeks. The gums are hard and firm. He is a healthy, husky boy, eats well, sleeps well and rarely shows signs of trouble with his teeth, though he occasionally cries out and rubs his gums.

What would cause such late and irregular eruption, and can anything be done to hasten same?

H. M. G.

ANSWER.—The tardy eruption of the teeth is not usually considered to be a harmful or serious thing and they will no doubt all come through in due time since the boy seems healthy, sleeps well and eats well. I do think, however, that it is well to lance the gums when they are in the condition you describe over the two lower centrals. This can be done without any particular discomfort by injecting a little novocain and then cutting with a sharp lance clear down until the lance comes in contact with the enamel. Make two incisions in the form of a cross. Following this the little teeth will usually seem to erupt quite rapidly.—V. C. SMEDLEY.

Editor Practical Hints:

For six years I have been using personally and advocating the use of finely sifted table salt as a dentifrice. My experience has been more than satisfactory, as I have found it the best home treatment yet for sore and bleeding gums. My reasons for its use have been that it is just abrasive enough before it gets thoroughly saturated with water that it does all the cleansing necessary, is a bleaching agent, good preservative, and good antiseptic. Two years ago I was much gratified to learn while taking a post course under Dr. W. C. Coston that he also was a strong advocate for it, and I would appreciate very much your opinion as to its use.

W. C. R.

ANSWER.—Salt as a dentifrice has, I believe, all of the advantages you claim for it, though I should think that unless *very* finely sifted it

would be unpleasantly sharp and abrasive on the gums when used full strength and in granulated form. The taste of straight, full strength salt is very objectionable to some people. I don't know whether there is anything to this or not, but I saw a statement some time ago to the effect that an eminent physician is claiming that the excessive use of salt with our foods is one of the principal causes of cancer.

—V. C. SMEDLEY.

Editor Practical Hints:

I am an interested reader of your Practical Hints in the DENTAL DIGEST. If you can help me any on the following case will appreciate it very much; if not, possibly some other reader may have had a case similar, and I would like very much to get a report on it.

The patient, male, age twenty-eight. He shows no inflammatory condition of the gums; mouth apparently in healthy condition, but reports a dry feeling in the throat and around the gums, and then bleeding. I cannot tell whether the blood comes from the mouth or throat. He has been advised by specialists that the trouble was coming from his tonsils. He had his tonsils removed, but no results. Condition bothers at night, and as he has a weak stomach is bothered quite a lot with vomiting due to this condition. Hope you will be able to suggest some relief, as I have never had a case similar to this one. Doctors I have talked to cannot advise me.

T. F. B.

ANSWER.—Would say that the clinical symptoms seem to be contradictory. I don't see how there could be bleeding from the soft tissues if they are perfectly healthy. It is possible that he has a case of Periodonticlasia due to traumatic occlusion with destruction of the supporting tissues, but not much, if any, hypertrophy.—G. R. WARNER.

Editor Practical Hints:

There is a widespread popular belief that the eruption of the deciduous teeth is the cause of all sorts of gastric and other disturbances. This is a perfectly normal process and I have been at a loss to understand why there should be any pathological symptoms accompanying it.

Every mother firmly believes that whatever is wrong with her baby is due to "cutting teeth."

The first four permanent molars erupt a few years later without even the child's or parents' knowledge, and I have been of the opinion for several years that it is a mistaken idea, but if so would like a scientific explanation of the same.

J. I. T.

ANSWER.--The systemic disturbances accompanying the eruption of deciduous teeth have been much discussed for years. It is undoubtedly a physiological process which should not cause any systemic reaction, but the fact remains that it sometimes does cause such reactions. In all probability gastro-intestinal disturbances due to injudicious feeding are frequently the cause of the reactions laid to teething. There is also the probability that the lack of a proper diet—insufficient vitamins—causes real difficulty in teething. There may also be hereditary causes for the nervous disturbances in this normally physiological process.—G. R. WARNER.



CORRESPONDENCE

New Haven, Conn.

Editor, DENTAL DIGEST:

With reference to the discussion on "Systemic Gaseous Distension Following Extraction" appearing on page 849 in the December issue of *THE DENTAL DIGEST*, of which I am a subscriber, I state the following:

The tuberculin test in adults is considered worthless as a diagnostic aid in tuberculosis. The absence of such a test does not, in any way, rule out tuberculosis. If the subcutaneous emphysema is to be explained by a pulmonary rupture, tuberculosis need not necessarily be its cause. Furthermore, there doesn't seem to be any possible bearing of this dental operation on such a pulmonary accident unless the two were really coincidental.

The absence of symptoms and signs of infection, as would necessarily be present if this were an infection with the gas-forming *B. Welchii*, indicates that this subcutaneous emphysema is undoubtedly of mechanical origin.

It remains only a question as to the point of entrance of the air. The wound of the operation performed would seem to be too small an area for the entrance of so much air as the history indicates, especially in the absence of a negative pressure in a subcutaneous tissue which might suck the air into it. The only other possibility is a coincidental pulmonary accident with a rupture of an emphysematous portion of the lung and the discharge of its air into the subcutaneous tissue. Such a condition may occur in a lung which has become emphysematous as a result of some chronic pulmonary involvement, such as asthma, chronic bronchitis or tuberculosis.

The history, as given, is too short and inadequate in symptomatology and clinical findings to make a proper diagnosis, but in the absence of any signs of infection it is most likely a coincidental pulmonary accident and suggests a careful study of the lungs.

The reason for escape of air through the tooth socket can be explained on the basis that a bronchial cyst was present and was ruptured where the tooth was extracted.

If the reader will recall, in embryonic life there are five bronchial clefts or arches. The upper bronchial arch becomes the mandibular arch from which the mandible develops. Occasionally the bronchial arch does not close up and may form bronchial cysts communicating

with the mandible. A rupture of a cyst of this sort explains the gaseous escape.

I have tried to give you my opinion of the case, which I hope will be of some value.

P. H. KAMINSKY, D.D.S.

FROM JAPAN

Tokyo, Japan.

DR. G. W. CLAPP,
220 West 42nd Street,
New York, U. S. A.

My dear Sir:

I have been so encouraged by your kind and most sincere compliments that in accordance with your friendly advice I shall write out in detail about what happened in our place on the 1st of September.

At the time the earthquake occurred our college students were not in the schoolrooms because most of them went home for summer vacation, but a few of them were left in the infirmary in order to finish up their practicing, so not many people were in the school buildings. I myself was in my residence and was attending to a little business. My residence was right near the college grounds, only about twelve feet distant from the fence of the school. The first big shock attacked my house and gave an inexpressible feeling—I think every one felt that way. It was just like an experience on the steamer when I made a journey to the United States. The big vibration continued for a few minutes, accompanied by a rumbling of the ground. It is impossible to use any words for describing the scene. During those few minutes about fifty thousand people were killed in Tokyo and Yokohama city. Although my residence and college buildings stood firmly without any damage, brick buildings and high, reinforced concrete buildings collapsed everywhere; also buildings of false construction could not keep their stability. The moment I found out that my college buildings stood well I felt so happy, but that joy had only a short life! About two o'clock on the same day white smoke arose on a corner of the medical storage room. A loud voice was heard shouting "fire, fire!" I did not know what had happened, as you know I am lame and I could not run speedily to the place where the voice came from. A few seconds passed and flames showed through a window, fire spreading all over the floor of that storage. At that moment the fire engines arrived and tried to connect hose to the city water mains, but it was in vain, owing to the fact that the water supply system had been destroyed by the earthquake.

Thus all my buildings burned with valuable books and other specimens. The following items show the amount of my loss:

1. Dental chairs, 120; 2. Books and journals, 18,000 volumes;
3. Desks and chairs, 480; 4. Buildings, 10 (buildings covered area of 51,120 sq. ft.); 5. All estimated about \$400,000 in American money;
6. Miscellaneous articles, 41,000.

This report was made officially to the Board of Education.

However, I am thankful enough that my life was spared and that my students were all safe. I am now bending my efforts to the reconstruction of Nippon Dental College. If, in any way, you can give us assistance it will receive not only my gratitude, but that of my students, about 700 in number, and of their parents and also of applicants for the future.

Assuring you of our appreciation of your friendly and most sincere help, and with many thanks, I am

DR. I. NAKAHARA.

Editor, DENTAL DIGEST:

I have under my care the most peculiar case of teething. Thought perhaps it would be of interest to you, and you might be able to give me some information on the case.

An infant a little less than six months old, a beautiful, healthy baby girl, is apparently normal in every way except the eruption of the teeth. A red spot appears upon the gums, and in a few days a tooth will be through and become loose right away, making it necessary to take it out. The mother, in cleansing the mouth with a soft gauze, took a tooth out. The teeth are not coming in in regular form. The laterals, cuspids and molars are through but the centrals have not come in. The teeth do not hold their position.

Please give me your opinion as to the cause of this and what the outcome might be.

W. A. R.



DENTAL LABORATORIES

Fundamentals In Cast Clasp Construction

By I. J. Dresch, Toledo, Ohio

(Continued from January)

Now and then a full upper denture causes continual compression of mucosa through atmospheric pressure, maintaining in the denture fit the tissue compression resulting from too much pressure or stiff material in taking the impression. Nature will not submit to such abuse and removes the effect by immediate resorption. Thousands of rebase operations give mute testimony in support of the claim. What, then, may be expected of tissue compression continually maintained, not by atmospheric pressure, but by rigid-fitting cast clasps? Resorption, of course, soon removes the condition, after which the saddle has normal tissue contact (if any) and ceases to carry masticating pressure to the tissue.

It is possible that one or both of the occlusal rests may not have proper contact with the occlusal tooth surfaces. In this event the saddle would be permitted to move tissue-ward in harmony with mucosa compression, in the proportion that the occlusal rests stood away from the abutments. If the occlusal rests allow sufficient movement to compensate for complete tissue compression, the fully compressed tissue would offer a bearing and the saddle would carry the masticating load to the mucosa.

If, after such movement occurs, the occlusal rests are still without contact with abutments, the entire masticating pressure would be placed on the tissue, *and none on the abutments*, because under such conditions the clasp wings would spread to allow the saddle movement and would not have the necessary tooth-bearing to carry any part of the load to the abutments.

Admitting, for the sake of argument, that such a condition would equally divide stress between the abutments and mucosa, such clasp movement would be injurious to the tooth enamel and, if continued, would threaten the life of the tooth through injury to the peridental membrane. And to complicate matters further, the spring or resiliency of mucosa is far from sufficient to force fairly tight-fitting cast clasps

back to normal position. Such saddle and clasp movement, then, would cause continual tissue compression as well as spreading (in most cases) of the abutment teeth.

From all of which it is quite apparent that much of the trouble in connection with cast clasps is not because of the clasp, but because of

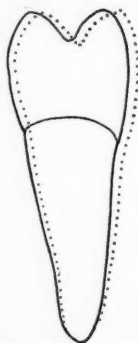


Fig. 2. In proportion to their looseness, all abutments have lateral mobility. But the lateral movement of such abutments during function will depend upon cusp relation and mandibular movement; deep cusp interdigitation and pronounced lateral mandibular movement will result in exaggerated abutment tooth movement.

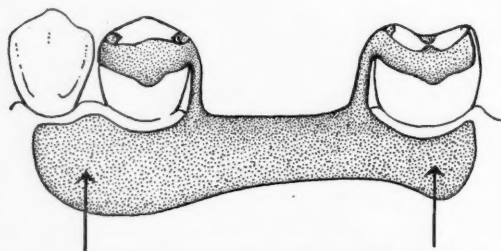


Fig. 3. The use of the saddle with extensions in clasp bridge work is therefore good practice, especially when abutments are weak, for lateral saddle and tooth movements are limited to the compressibility of mucosa beneath the saddle extensions, and at these points tissue compressibility is at a minimum.

faulty clasp design and application. Where the occlusal rests have been at fault, allowing the saddle to move tissue-ward, there has been a spreading of abutments and much discomfort. In other long span cases the cast clasp has been used on the fallacious theory that the stress would be divided between the abutments and tissue. This has resulted in a great overload on the abutments and, the clasps being merely

designed for retention with small occlusal rests, the overload has been placed on the abutments at an abnormal angle with severe and harmful traumatic effect.

Another source of trouble has been the lack of accurate technic. Dr. Norman B. Nesbitt, father of cast clasp saddle bridgework, has always assembled such cases on a stone cast with the abutment teeth in amalgam. This has made it possible to check the relation of one clasp or abutment to the opposing clasp or abutment. This eliminates in advance any undercuts that might exist. But a great percentage of cast clasp saddle pieces have been made at one casting, and without the cast used by Dr. Nesbitt all subsequent fitting has been done in the mouth. But the horizontal mobility of abutments precludes the possibility of such adjusting in the mouth being accurately accomplished. This has often resulted in exaggerated tooth movement at each insertion and removal of the restoration. This action is a cause of soreness, and instances are known where the operation became so painful that the patient would not remove the piece for cleaning purposes, or before retiring. This has aggravated the tendency to decalcification, in many instances.

The last few paragraphs apply to the use of cast clasps in free-end saddle work as well as in bridge spans with piers or abutments at each end. Dr. Nesbitt, however, has never recommended the use of cast clasps in free-end saddle cases because of the resultant stress on anchorage teeth. Such cases also give trouble from undercuts or tension between abutments, and this cannot very well be corrected without impairing the ability of the clasps to retain. But stress-breaking connectors, now known and generally used, eliminate the effects of cast clasp leverage and combine to make the cast clasp an ideal retainer in many denture cases.

While much more might be written, it seems reasonable to believe that a sufficient number of facts have been brought out to warrant the statement that the cast clasp has often been condemned for failure because the impossible was expected. The facts seem to show that the cast clasp is a very useful agent, but one that requires and deserves as much thought and care as cavity preparation and inlay work.

Probably ninety per cent of all cast clasp restorations are constructed by dental laboratory technicians. Many of these men have been successful in the work in spite of improper preparatory work and lack of scientific knowledge, their innate skill and empirical methods bridging the gap for them. In addition, even those technicians who follow the technic as taught by men supposed to be authorities may be carefully following a method based on fallacy. As the laboratory technician should look to the dental profession for exact knowledge, and as in all probability he will continue to construct ninety per cent

of cast clasp bridge cases, the present-day habit of dentists of leaning on the laboratory technician in cast clasp bridgework must stop before progress can be properly made. And before this can be accomplished, the fundamental principles which govern the construction and application of cast clasps must be understood and the technic made to harmonize with the controlling principles.

The technic to follow is based upon the following principles:

Saddle bridges with cast clasps at each end are 100 per cent tooth-bearing.

Cast clasps for saddle bridges, must be designed with sufficient occlusal rests, properly placed, to place the masticating load in line with the tooth root.

The saddle of the cast clasp bridge does not carry the stress to tissue, but the saddle will move laterally in conjunction with horizontal abutment tooth movement. Thus the saddles may be fitted with extensions for the purpose of tissue massage at the lingual of abutment teeth.

The principles which govern the load capacity of abutments, when crowns or inlays are used, should also govern the load capacity when cast clasps are used.

Cast clasp saddle bridges should be assembled on an accurate cast which is preserved, so that the finished bridge may be tested and undercuts between abutments eliminated before insertion of the restoration.

Cast clasps for posterior teeth should be fitted with accurate-seating occlusal rests to prevent wedging of clasps and consequent soreness and danger. For anteriors, the clasps should cover sufficient lingual or palatal tooth surface to give the effect of the occlusal rest.

When used in connection with free-end saddle cases, the cast clasp should have an indirect connection with the denture.

The inner surface of cast clasps should be smooth and the cervical edge rounded, to aid insertion and remove danger of undue abrasion.

Cast clasp restorations should not be kept in the mouth overnight, and the clasps should be cleaned frequently.



DENTAL SECRETARIES and ASSISTANTS

Secretaries' Questionnaire

All questions should be addressed to Miss Elsie Pierce, care of
THE DENTAL DIGEST, 220 West 42nd Street, New York City.

We are indebted to Dr. J. R. Cameron, Philadelphia, for the following:

"May I suggest a manner to remove iodine stains from linen. Take granular sodium hyposulphite. Make a saturated solution and apply freely to the stain. It will be removed instantaneously. Wash linen in water afterwards. Sodium hyposulphite is ordinary 'hypo' used in photography."

What does my employer mean when he speaks of karat, such as 22-karat gold, 18-karat solder, 14-karat gold, 20-karat solder, etc?

Pure gold is known as 24-karat; anything below 24 is alloyed with other metals; 22-karat gold has two parts alloy, 14-karat has ten parts alloy. The difference between gold plate and gold solder of the same karat lies in the lower fusing point of the solder made possible by using lower fusing alloy metals in its composition.

I should like a formula for a low-fusing metal; also kindly explain what is meant by "die" and "counter-die."

L. W.

A low-fusing metal commonly called Babbitt's Metal contains one part copper, two parts antimony, eight parts tin. A die is the duplicate in metal of a model; a counter-die is an impression in metal, the counterpart of a die.

Where does saliva come from?

Principally from the parotid gland located underneath the ear, the sublingual gland underneath the tongue, submaxillary gland within the circle of the lower jaw beneath the molars. There are also many small glands in the mouth which give forth mucous substances which in combination with these named form saliva.

My doctor speaks of devitalized pulp, and the patients ask if the nerve is dead. I should like to know the difference between the pulp and the nerve of a tooth.

A NEW ASSISTANT.

The pulp is the entire content of the root canal cavity, composed principally of connective tissue, blood vessels, lymph vessels and nerve tissue. The nerves of a tooth are the fine filaments of nerve tissue which are distributed within the pulp and have their endings within the tooth structure. The pulp cavity is divided into two sections; the one in the crown of the tooth is called the pulp chamber and that in the root of the tooth the root canal. In its function the pulp responds to heat and cold and produces the sensation of pain. This is no doubt the reason why patients call it "the nerve."

There seems to be a discoloration on the teeth used as a shade guide for synthetic fillings. Is there anything I can put in the water to prevent this as it looks very unsanitary? This occurs unless the teeth are brushed and the water changed daily. I should be very thankful for a suggestion.

M. L. D.

Through Dr. Paul Poetschke, Director of the Department of Chemistry of the L. D. Caulk Co., I am able to suggest that you keep the bottle filled to the line with distilled water containing 1 per cent solution of formaldehyde, U.S.P. If plain water is used it becomes stagnant and vegetable organisms will grow in the bottle and on the teeth. For this reason formaldehyde is used to prevent growth. Incidentally it keeps the shade teeth aseptic and avoids the necessity of frequently changing the water. If the 1 per cent formaldehyde solution is used it is not necessary to change the solution more than a few times a year. Formaldehyde, U.S.P., can be obtained at any drug store. Place fifteen drops of it in the clean bottle and add distilled water to the mark.

December Meeting

OF

EDUCATIONAL AND EFFICIENCY SOCIETY FOR DENTAL ASSISTANTS,
FIRST DISTRICT, NEW YORK, INC.

The December meeting of the Educational and Efficiency Society for Dental Assistants, First District, New York, Inc., was held on Tuesday evening, December 11th, 1923, at the Academy of Medicine, 17 West 43rd Street, New York City, Juliette A. Southard, President, in the chair.

This meeting was celebrated as the second birthday of the organization, and reports of committees, etc., followed the usual order of business. A most interesting program was presented, the speakers being members of the Society.

Miss Edna Wiedenmuller chose for her topic "Smilin' Thru," dedicating her paper to those who choose as their profession that of dental assistant, for no matter how learned or skilled the dentist may be, his dental assistant must guide the office through the many pleasures and hardships incumbent therein. If she can smile while she is performing with willingness some duty that must be done, but of which she is not at all fond, she is the person for a dental office. Where there is a will there is a way to the dental assistant who grasps every opportunity to advance her knowledge, increase her education and who has a firm determination to succeed. Success will be hers and she will have little difficulty in "Smilin' Thru."

Miss Sylvia Dannenbaum's address, "Our Dental Assistant," was a "scenario" of the qualities necessary for the making of a competent dental assistant. She patterned her presentation upon the manner in which some film artists introduce their conceptions on the silver sheet, a shelf upon which are stored containers labelled with the names of the numerous attributes a dental assistant should possess, underneath an old-fashioned wooden bucket with a crank extending from its side, Father Time pouring a little of the content of the containers into the bucket and turning the crank vigorously and mixing these priceless ingredients, to wit: Ambition, Determination, Perseverance, Appearance, Energy, Initiative, Will Power, Concentration, Cooperation, Sincerity and Loyalty. These qualities will make for success and happiness in the work one loves. It is for us to mix them well and store in a fresh container labeled "Our Dental Assistant, to be well shaken before taken."

Miss Frances Gilmore spoke on "Stepping Stones for Efficiency," picturing the dental assistant as crossing a stream over stepping stones in her desire to reach the further shore of Efficiency. Some of these stones were called, Interest in the Work, Office Cleanliness, Personal Appearance and Neatness, Attentiveness to Duty, Personality, Loyalty. She urged the dental assistant not to become discouraged if some of the stones were "wobbly" and permitted her toes to get wet or even to get a good ducking, but to step upon them firmly and make the crossing notwithstanding the difficulties. She spoke of the Society as being one of the most important stepping stones and urged the members to take advantage of the special instruction provided, which would assist them very materially to reach safely the shore of Efficiency.

Miss Emily Campbell chose "Common Sense" as the title for her address, saying that one must possess common sense if one is to succeed in one's chosen occupation and nowhere is common sense more needed than in the dental office where one has to come in contact with so many trying conditions. A girl in a dental office may be a brilliant individual and know much about dentistry; she may be neat and attractive,

her personality may be very pleasant, but if she lacks what is needed most, common sense, she will not be successful as a dental assistant. The word "common" ordinarily means to us something of no particular value, yet this quality is most uncommon and rare in its highest development; therefore, it is to be cultivated in every way so that one may become a valuable part of an efficient and well-working establishment.

A number of prominent members of the dental profession of New York and New Jersey attended the meeting, among whom were Dr. Charles Faupel, President of the New Jersey State Dental Association, and Dr. John L. Peters, President of the First District Dental Society. Dr. Faupel addressed the meeting and commended the members in their efforts to secure greater education for better service to the dentist and patient. He spoke of the splendid work being done by the classes and predicted a successful career for the Society and its members. Dr. Peters was very complimentary to the Society and said he was pleased at the earnestness of the members in their endeavors to fit themselves better for their work in the dental office. He spoke of the splendid showing made by the Society through its Group Clinic presented before the State Dental Society last May, and expressed himself as pleased to know that this Clinic Group was perfecting its demonstration so that it might be presented to other State and local dental societies.

Nine new members were received into the Society, and the names of four dental assistants were read as having made application for membership.

The chairmen having charge of the various sections in special instruction reported for the classes as follows: Sterilization, Frances Gilmore, first meeting December 13th. General Laboratory, Anne Marvel, first meeting December 7th. Gold Casting, Mary Miller, first meeting December 7th. Speaking and Parliamentary Procedure, Jean Tallaksen, first meeting December 6th. Roentgenograms, Emily Campbell, final meeting of first class December 3rd, enrollment taken for a second class. Office Regeneration, Agnes MacNeil, date to be announced. Porcelain, Catharine Duffy, date to be announced. Office Accounting and Records, Agnes MacNeil, course completed with enrollment taken for second class.

Approximately one hundred and forty members are enrolled in the classes, some of the members having enrolled for more than one class.

The director of the clinics, Miss Agnes MacNeil, announced that preparations were under way for a meeting to be held by those taking part at which plans were to be perfected for the presentation of the clinics before State and local dental societies. At the March meeting of the Society the Clinic Club will give a demonstration.

Elsie Autenrieth, Chairman of the Entertainment Committee, an-

nounced that details are being completed for an entertainment and dance to be given during the latter part of January.

Owing to a holiday falling on the second Tuesday in February the Society voted to change the date of meeting to Thursday, February 7th, 1924.

The Society extends a cordial invitation to members of the dental profession and to their dental assistants to attend the meetings.

First Meeting

OF

THE EDUCATIONAL AND EFFICIENCY SOCIETY FOR DENTAL ASSISTANTS OF MASSACHUSETTS

EDITOR'S NOTE.—So apparent have been the benefits of the New York society of similar name to those of its members who have taken the work seriously that some of the forward-looking dental assistants in Massachusetts have organized a society there.

They may meet, at first, the same attitude on the part of the dentists that such societies are likely to meet everywhere: support from a few, opposition from a few, watchful waiting by the greater number.

If the Massachusetts society is as wisely managed as the New York and Indiana societies have been (the only two with which the editor is personally familiar), it will win for itself the good will and active support of the liberal-minded dentists of the state. It is strictly up to the society. If it seeks to develop more competent and skillful assistants and keeps the matter of remuneration in second place, it will go far. If it should form itself into a union, with the prime object of boosting wages for un-boosted service, it will be a total failure in every way.

Few people in any walk of life ever won higher esteem than the lady who was for many years secretary for Dr. C. N. Johnson. At the last annual meeting of the Indiana State Association of Dental Assistants Dr. Johnson spoke for something like thirty minutes upon the lessons from her life.

Perhaps a proper appreciation of highly trained, non-graduate assistants in dental offices may not come as quickly as many assistants naturally feel that it should. But it is coming. More and more, dentists are realizing that such an assistant is one of the best investments in the office. With that realization the remuneration will take care of itself, because if the employer of such a valuable assistant will not pay what she should receive as a profit-producing part of the staff, other dentists with greater need or clearer vision will pay it.

Just a word of friendly suggestion to dental assistants everywhere! There is probably no finer form of service than yours can be made, either from the aspect of the value to those who receive the service or mental satisfaction to those who render it. There are few vocations in which the value of the service can be made so readily and continuously visible to him who buys it and pays for it. And few indeed

are the vocations in which there is so much individual opportunity to improve continually the quality of service by the extension of knowledge and increase of skill.

Accept the belated holiday greeting, not only for the New Year, but for all of the best year that dentistry has ever seen.

The first meeting of the Educational and Efficiency Society for Dental Assistants of Massachusetts was held in the office of Dr. F. E. Jeffrey, Salem, December 20, 1923.

Mrs. F. E. Jeffrey of Salem was elected temporary president, and Miss Ethel Wilson of Boston temporary secretary.

At the second meeting of the Society, held on January 8, 1924, at the office of Dr. John Goodridge, Lynn, the following officers were elected: President, Mrs. F. E. Jeffrey, Salem; Vice-President, Esther Hyland, Boston; Secretary, Madeline Taylor, Beverly; Treasurer, Christie Hall, Beverly; Executive Chairman, Bessie Holden, Lynn.





EXTRACTIONS



No Literature can have a long continuance if not diversified with humor—ADDISON

Remorse is just a sad contemplation of the check stubs.

A real genius is a woman who can make her husband believe that beating rugs will improve his golf swing.

America is becoming a nation of Wireless Christians. Ask them what church they belong to and they can't tell you, offhand, whether its the First WEAU, the Reformed KDKA or the Interdenominational WZY.

Poise is the quality that keeps you from stepping on your own feet while asking the banker for a loan.

(Customs Officer)—Anything dutiable, madam?

(Fair Traveler)—Just wearing apparel, sir.

(Officer)—after a search has revealed six quarts)—Do you call that wearing apparel?

(Fair Traveler)—Certainly. Those are my husband's nightcaps.

Some people are born intelligent, some achieve intelligence and others walk up moving stairways.

"Who is my neighbor?" asked the man in the Bible. Apparently nobody ever borrowed a lawn mower or anything else from that bird.

Two gentlemen were uncertainly flivvering their way home from a party.

"Bill," said Henry, "I wancha to be very careful. First thing ya know you'll have us in the ditch."

"Me?" said Bill in astonishment, "Why, I thought you were drivin'."

(Uncle Si.)—Did the doctor use a local anesthetic?

(Farmer Hi.)—No, by heck; he sent all the way to New York for it.

(Passenger)—after the first night on board ship)—I say, where have my clothes gone?

(Steward)—Where did you put them?

(Passenger)—In that little cupboard there, with the glass door to it.

(Steward)—Bless me, sir, that ain't no cupboard. That's a porthole.

Playing your first game of golf is equivalent to having your salary garnished for the rest of your life.

He tried to cross the railroad track
Before a rushing train;
They put the pieces in a sack,
But couldn't find the brain.

Man has one outstanding distinction: He is the only creature on this earth that can be skinned more than once.

(Ses the Cop on the Beat)—When I see a man late at night goin' into a house an' actin' scared like, I know he lives there. If he wuz a burglar he wouldn't never be that nervous.

Take one reckless, natural born fool; two or three drinks of bad liquor; a fast, high-powered car; soak the fool well in the liquor; place in the car and let him go. After due time remove from the wreckage, place in black satin-lined box and garnish with flowers.

It's winter, but it was so hot the other day that a whole field of pop-corn popped. Cows thought it was snow and froze to death.

(Pa)—I reckon, daughter, that young man's watch must be fast.

(Daughter)—What makes you think so, Pa?

(Pa)—Why, when you were seeing him out the door last night, I heard him say "Just one," and it was only eleven o'clock.

(Teacher)—What supports the sun in the sky?

(Bright Boy)—Its beams, of course.

Jepson, one of our acquaintances, visited the Municipal building lately. He walked over to the directory to get his bearings. He did not notice a pretty young lady alongside of him until the attendant who directs traffic kindly announced:

"This way, folks; the marriage bureau is one flight up."

Jepson and the young lady looked at each other and blushed; and Jepson, thinking he was in danger, beat a quick retreat.

DIETETICS and HEALTH

Good Teeth Born, Not Made

The toothbrush does not make good teeth. It helps keep them good, but all the brushing in the world will not save them if they are organically unsound. So we are told by Dr. Harold DeW. Cross, director of the Forsyth Dental Infirmary for children, in Boston, writing in *The Nation's Health* (Chicago). Dr. Cross would not have us use the brush less, but reminds us that the brush is not all. Preventive dentistry, Dr. Cross tells us, takes account of the prenatal influence of the mother's diet and the nutritional balance of early years, as the real factors in tooth decay. He goes on:

"Good teeth are determined before a child is born and the chances are, even without the use of the toothbrush, teeth that are originally sound and well constructed will remain sound for many years. The toothbrush does not make good teeth. They are developed the same as any other part or organ of the body, and if they are not well constructed and sound it will be found that the use of a toothbrush until doomsday will not save them.

"Prenatal influences, proper diet, including coarse whole foods—milk, leafy vegetables, and fruit—are the things that make good teeth, not the use of the toothbrush. The child should be breast-fed a suitable length of time rather than fed upon any kind of prepared milk or other foods. This makes a great difference in the teeth of a young child.

"Herbert Hoover says: 'If we could grapple with the whole child situation for one generation, our public health, our economic efficiency and the moral character, sanity, and stability of our people would advance three generations in one.'

"We have been taught to believe that dentists have much to do with good teeth. The work of the dentist, however, only begins after the teeth are here, when they are all formed and in whatever condition they are developed in the jaw, which is the result of the prenatal influence, whether good or bad, so far as the teeth are concerned.

"It has been said that a clean tooth never decays, but the teeth must be sound in the beginning to make this true. Prenatal influences and

care are very necessary, and also as much care and attention in regard to diet and hygiene should be given when the child is from two to five years of age.

"The sixth year in a child's life divides the preventive and reparative care necessary, and the limit should not be reached before this care is given. Care in the kindergarten age is better than when in the first grade at six years, and the nursery or pre-school time is better than the kindergarten. So, too, prenatal care is better than the nursery age, and is the best and only time to realize fully the importance of primary teeth, and lay the foundation for good and sound permanent teeth.

"All adult dentistry disease, except pyorrhea, is the result of poor tooth development or neglect of the proper diet and hygiene during childhood. Dead teeth, local infections and diseases of the heart, kidneys and joints are the results of childhood neglect of the teeth and, if caries could be eliminated, would prevent all these later complications.

"So, use the toothbrush, but do not depend upon it as the savior of your teeth. Mothers, before the baby comes, must take the responsibility of giving good or bad teeth to their offspring, and before six years of age the whole question of good teeth for life will have been decided."



FUTURE EVENTS

UNIVERSITY OF IOWA COLLEGE OF DENTISTRY AND ALUMNI CLINIC to be held at Iowa City, Iowa, February 22nd and 23rd, 1924.

F. B. WHINERY, *President*,
Dental Alumni Association.
RAY V. SMITH, *Secretary*.

THE MASSACHUSETTS BOARD OF DENTAL EXAMINERS will hold an examination for dentists and dental hygienists on March 11, 12, 13 and 14, 1924. All applications for examination should be filed at the office of the Secretary, 146 State House, Boston, Mass., at least ten days before date set for said examination. Further information, application blanks, etc., may be obtained at the same address.

J. N. CARRIERE, D.D.S., *Secretary*.

THE BEDOUMS OF ZETA CHAPTER, Xi Psi Phi Fraternity of the Pennsylvania College of Dental Surgery, will hold their annual reunion at the Pi Chapter House, 3911 Spruce Street, Philadelphia, Pa., on March 15, 1924. Alumni not enrolled are requested to address the Secretary.

A. G. DITTMAR, *President*.
GEORGE B. IRVINE, *Secretary*,
22 S. 52nd Street, Philadelphia, Pa.

The twenty-third annual meeting of THE AMERICAN SOCIETY OF ORTHODONTISTS will be held at the Hotel Muehlebach, Kansas City, Mo., on March 18, 19, 20 and 21, 1924.

WALTER H. ELLIS,
Sec'y-Treasurer.

NOTICE—In order not to conflict with the meeting of the American Society of Orthodontists which meets in Kansas City, Mo., March 18, 19, 20 and 21, 1924, the annual meeting of the NEW YORK SOCIETY OF ORTHODONTISTS has been advanced two weeks and will be held Wednesday afternoon and evening, February 27, 1924, at the Hotel Vanderbilt, Park Avenue and 34th Street, New York City.

WILLIAM C. FISHER, *Secretary*,
501 Fifth Ave., New York, N. Y.

The Fifty-fourth Annual Meeting of THE NEW JERSEY STATE DENTAL SOCIETY will be held in the Stacy-Trent Hotel, Trenton, April 9-12, 1924.

The meetings embodying the Literary Program will convene in the auditorium of The School of Industrial Arts adjoining the hotel.

R. S. HOPKINS, *Director of Exhibits*,
913 Broad Street, Newark, N. J.

F. K. HEAZELTON, *Secretary*,
223 East Hanover Street, Trenton, N. J.

The 56th annual meeting of the DENTAL SOCIETY OF THE STATE OF NEW YORK will be held at Kalurah Temple, Binghamton, N. Y., May 7-10, 1924.

The literary exercises and exhibits will be held at Kalurah Temple. Dr. Thomas R. Cullen, Oswego, N. Y., is Chairman of the Exhibits Committee, and those desiring space should communicate with him immediately.

The Executive Council will convene for the transaction of the business of the society, Tuesday, May 6th, at 3:00 P. M.

Hotel reservations should be made direct with the hotel management. Headquarters at Hotel Arlington.

Every effort is being put forth to make this meeting one of the most attractive in the history of the society.

A cordial invitation is extended to all ethical practitioners. Admission to the literary meetings and clinics may be secured by presenting membership cards in State or National Societies.

For further information and programs, address A. P. Burkhart, Secretary, 57 E. Genesee St., Auburn, N. Y.

THE DENTAL HYGIENISTS ASSOCIATION OF THE STATE OF NEW YORK will hold its fourth annual meeting in Binghamton, N. Y., Friday and Saturday, May 9th and 10th, 1924, in connection with the New York Dental Society meeting. All dental hygienists in the state are urged to attend and a cordial invitation is extended to all those in other states. Detailed information will be published.

GRETCHEN GOLDSMITH, *Cor. Secretary*,
11 Bates Block, Ithaca, N. Y.

Please be advised that the 1924 meeting of the MISSOURI STATE DENTAL ASSOCIATION will be held in Excelsior Springs, Missouri, May 26, 27 and 28, 1924.

H. C. POLLOCK, *Secretary*.

THE STATE BOARD OF REGISTRATION AND EXAMINATION IN DENTISTRY OF NEW JERSEY will hold its regular examination at Trenton, N. J., June 23rd, 1924. License fee, \$25.00; re-examination fee, \$10.00.

Practical tests required: Insertion of an approximal gold filling with the approximating tooth in position, compound approximal amalgam filling and a silicate filling; candidate must furnish his own patient. Taking of impressions,

bite, selection of teeth, articulation, trial plate; candidate must furnish his own patient. Practical examination in mouth diagnosis.

Attention is directed to the following quotation from the dental law of New Jersey: "Applicant shall present to said Board a certificate from the Commissioner of Education of this State, showing that before entering a dental college he or she had obtained an academic education consisting of a four-year course of study in an approved high school or the equivalent thereof."

In accordance with this law the secretary will issue application blanks only upon presentation of the required certificate from the Commissioner of Education, State House, Trenton, N. J.

Application must be filed, complete, ten days before the date of the examinations. Address all communications for further particulars to

JOHN C. FORSYTH, *Secretary*,
429 E. State St., Trenton, N. J.

The Annual Meeting of the DENTAL PROTECTIVE ASSOCIATION OF THE UNITED STATES was held at the Palmer House, State and Monroe Streets, Chicago, on the third Monday of December, the 17th, at 4 P. M. sharp. The report of the officers was given; a Board of Directors elected and such business transacted as came before the Association.

The Board of Directors was reelected and organized as follows:

J. G. REID, *President*,
D. M. GALLIE, *Vice-President and Treasurer*,
E. W. ELLIOT, *Secretary*.

At the fifteenth annual meeting of the NORTH PHILADELPHIA ASSOCIATION OF DENTAL SURGEONS on January 9, 1924, the following officers were elected for the year 1924: President, Dr. Wm. C. T. Bauerle; Vice-President, Dr. Leon A. Halpern; Secretary, Dr. Warren A. Matlack; Treasurer, Dr. John H. Yerrick; Editor, Dr. J. Iredell Wyckoff; Delegate to the Philadelphia Dental Society, Dr. M. F. Quinn; Alternate, Dr. Thos. B. Wade.

